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Devoted to the Practice of  
**PREVENTIVE MEDICINE**

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Prevention of Mental Disease

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K. ROWLAY, R.N.

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## Difficulties and Problems in the Programme for Prevention of Mental Disease

A. T. MATHERS, M.D.

*Director, Psychopathic Hospital, Winnipeg*

SOME of the problems and difficulties to be met with in any plan for the prevention of mental disease are considered very briefly in this communication.

We do not need to dwell on the magnitude and seriousness of the problem. Most of us here, perhaps all of us, have this before us from day to day, year in and year out, and whilst we may be charged with being too deeply impressed with the importance of our own task, we would wish that the profession, public health authorities and citizens generally, were considerably more impressed than they are.

In years past, the study of mental disease has, for various reasons, become more or less separated from the great field of medicine proper. This has resulted in inestimable loss to both, but the lessons of the Great War have not been entirely lost and there has been a decided impetus to a reunion. Medical men see now more clearly than ever before that human beings must be considered as integrated units, mind and body, not body alone. The mentally ill can never be properly understood, let alone treated, if the vital physical adjustments of life are left out of consideration, nor can physical disease be adequately treated without knowledge of the tremendous importance of the operations of mind. I stress this point since a future marked by the united efforts of the medical profession is pregnant with great possibilities in both alleviation and prevention.

The medical profession is at present more interested in prevention than in any aspect of its field of work. Prevention presupposes accurate knowledge of causes, and at no time has the search for causes been as keen as it is now. Vital progress has been made, but the very complexity of the processes of life make the work extremely difficult. It seems as if with each brightening of the light of knowledge, the surrounding darkness becomes more extensive and deeper, relationships hitherto unsuspected constantly appear, with each elucidation a crowd

of new perplexities arises. That progress is being made, no one acquainted with the work of the past twenty-five years can doubt, nor could any one say that immediate practical use of new facts is not made.

The study of mental disease possibly has not progressed as rapidly as it should nor as rapidly as has work in other branches of medicine. Naturally, work in tangible, material things (tissues and organs that can be examined microscopically, secretions that can be analyzed chemically) attracts attention most readily, since, rightly or wrongly, the promise of results seems brighter. Work in intangible elusive things, such as mental processes, is not attractive to more than a very few. Such work is hard and full of discouragements and heretofore has been consistently impeded by lack of time and the financial means of carrying on the work. Many advances in mental medicine have been made by men deeply involved in the administration and routine work of large mental hospitals. No allowances in either time or money have been made and the invaluable work done and being done now, can only be accredited to personal initiative and effort. Doubtless, such a situation is largely due to the fatalistic attitude held by the public toward mental disease generally and a lack of knowledge of what could be done if the problem were whole-heartedly attacked. When we consider that one type of mental disease, *viz.*, dementia praecox, is responsible for twice as many hospital patients as tuberculosis, that such patients cost Canada over two and a half million dollars annually, and that without it we would close one mental hospital in Manitoba, when we consider these facts, we can no longer question the need for more work and more means of carrying it on.

I propose to very briefly note some points bearing upon prevention in the various types of mental disease. As mentioned, prevention depends on knowledge of causes and how they operate, and in mental disorders the causes are multiform and variable, vague and subtle, rooted widely and deeply in the very fundamentals of life and society.

For practical purposes, mental disorders may be divided into organic and functional. By "organic" we mean conditions due to, or associated with, definite structural damage to the nervous system—damage that may be seen macroscopically or microscopically. By "functional" we mean disorders and conditions in which such structural damage is not at present evident—conditions which seemingly depend upon disruptions in adjustments either between part and part in the individual or between the individual and his life setting (environment, society and its conventions, laws, etc.).

A very close analysis and appraisal of cases with a view to classifying them as "organic" and "functional" would, of course, give different results in different institutions and at different times. At one period the drift of opinion will be strongly toward the "organic" and at another time a distinct set occurs in the other direction. I noticed in a recent

publication that, in the New York State hospitals recently, the authorities concluded that 45 per cent of the cases were "organic" in nature and 55 per cent "functional". This is the highest proportion in the organic types that I have seen. A few years ago I concluded that the proportions should be approximately 23 and 77 per cent respectively. In any case the preponderance of patients belong definitely in the "functional" group, the very group in which search for causes leads into a veritable wilderness of unknown or poorly understood facts bearing upon individual or society life.

Among the organic types, mental disorder due to syphilis stands first in importance. Among 11,000 admissions to mental hospitals, 11.74 per cent belonged in this group. In Manitoba this proportion has never yet been reached. Last year 6.10 per cent were syphilitic. In this group the cause—infection with the organism of syphilis—is known, but treatment by the generally reliable remedies is not enough. It is of the nature of these syphilitic mental disorders that their actual appearance is only made years after the primary infection has occurred. And during those years, the disease hidden from sight, has been making constant headway, while the unfortunate victim, seeing no evidences of his malady, believes himself secure and safe. When finally his conduct becomes such that he is admitted to a mental hospital, degeneration has progressed beyond all possibility of cure. In the last few years the situation has bettered, and many early cases are now seen in which under malarial or tryparsamide treatment the process proves to be reversible and remissions of very considerable length and of complete character are obtained. When one asks what further could be done to further diminish the proportion of syphilitic mental disorders, one would suggest (1) treatment of all cases of syphilis as potential cases of neurosyphilis, (2) repeated adequate treatment remembering that *adequate* treatment now means something quite different to what was meant ten years ago, (3) repeated routine examinations of those once infected.

The mental disorders due to senility constitute the next largest organic group, 9.8 per cent of 11,000 admissions, 5.73 per cent in Manitoba last year. Many people pass through the senescent period in full possession of their mental faculties, others are not so fortunate. Just what organic difference marks the one type from the other, no one at present knows. There are definite changes visible in the brain. Undoubtedly physical factors are prominent. Research will ultimately disclose these, but of their nature we know little and hence preventive measures cannot be formulated nor applied. There likely is a connection between this group and the mental disorders due to "hardening of the arteries" of the brain (4.36 per cent in 11,000 admissions, 4.62 per cent in Manitoba last year). Possibly the same factors are operative in both. Heart and kidney disease and "hardening of the arteries"

are undoubtedly increasing in frequency and have deposed tuberculosis from its position as the most frequent cause of death.

For both senile and arteriosclerotic states, the only preventive measures available are general in character and include further emphasis on better personal hygiene and physical health, and systematic regular examinations, say, once yearly. "Too many great brains break, too many constructive careers are brought to a conclusion by arteriosclerosis." (Strecker.)

Alcohol accounted for 2.6 per cent of the Manitoba cases last year, while cases of drug addiction all but vanished only, of course, because of a change in policy of the hospitals and not because drug addiction diminished in importance as a social problem. However, we are interested in prevention at this time. At first blush, one is inclined to at once say, "remove alcohol and drugs and the problem is settled." This cannot be correct since, certainly in the case of alcohol, thousands use it who never show any mental abnormalities. The same very likely holds for drugs. There must be other factors, and it is well established that these factors are personality defects in the individual himself. In the tragic conflict between what he has been taught to desire and what he is allowed to get, man has found in alcohol and drugs a sinister but effective peacemaker—a means of securing for however short a time, some way out of the prison house of reality back to the Golden Age. "The bitter shame and anger against self remorse, the aching disappointment of defeated hopes, emotions defrauded of legitimate outlet—all these form conflicts too intense to be solved by many minds. Intoxication gives peace but with intellectual defeat and at the expense of self respect. It is only an armistice—it is peace without victory." (Lambert.)

The alcohol and drugs are then but one of the factors—mass restriction does not completely settle the problem. Some of the dimly understood factors in defective human personalities are also factors, and perhaps the stronger. Prevention is an individual problem and consists in the proper adjustment between alcohol consumption and individual idiosyncrasies. Not an easy problem, one must admit, and yet, in all likelihood, one upon whose solution success rests.

In the course of bodily disease, particularly that due to infection, *e.g.*, influenza, typhoid, pneumonia, etc., a certain number of cases of frank mental disorder arise. 2.5 per cent of our cases in Manitoba last year were so caused, a percentage very close to that in the 11,000 American admissions. Here again, personality defects play a part—"Alcohol and fever are the great testers of personality". The unstable personalities are generally the ones that break down. So that in prevention we are not only faced with the need for controlling and properly treating bodily disease, we are faced with the tremendous problem of elucidating defective personalities.

There are other types of organic mental disorders but they con-

tribute such a small proportion of cases requiring mental hospital care that we may, I think, pass them over.

When we approach the "functional" group we find ourselves in the midst of a vast *terra incognita* where facts and relationships are either not known or but imperfectly understood. And this is a condition of affairs not limited to Manitoba or Canada, it is world-wide. No one can put their hands on one fact and say this explains the whole thing. With one fact established, inevitably other paths for investigation turn up until it seems that there is no end—that ultimate knowledge is not attainable. Such a stultifying attitude is not right—the narcotic dreams of mysticism hold nothing that furthers human progress. Only by faith in the aims and methods of science can we hope to progress, and by virtue of these methods, pursued with all possible ingenuity and patience, progress is steadily, though slowly and painfully being made. Advancement is a matter of decades, not years, of life work, not a month or year of scattered observations. The clues lead into the primitive vastnesses of life itself, both individual and social.

Our social group bears inheritance from past times that have weakened as well as strengthened the quality of its members, and our civilization in its progress brings stresses that cause many of its members to break in mind or body. Its existence is continually threatened by numerous social ills that can, in our present knowledge, only be understood and given help through psychiatric methods and investigations.

In the great group, dementia praecox, that accounted for 30 per cent of our admissions in Manitoba last year, we are faced with the outcome of the malign activities of hereditary, physical, mental and social factors, all working to destroy the smooth running adjustments that alone make efficient normal individual life possible. There is little doubt that the foundations are laid in childhood, and here the search for causes must be made. But how can it be made without the co-operation of the public, without financial means or the men to utilize them?

In manic depressive psychosis, which regularly contributes about 15 per cent of mental hospital admissions, we know that heredity is responsible in 80 per cent of the cases. At once one's thought turns toward eugenics. But prevention of propagation is not practicable in the case of this disorder, since the condition is periodic in its manifestations and in the interval between attacks, the afflicted persons are useful and often valuable citizens. The man who has done wonders to stimulate interest in mental disorders and greater care in their treatment is himself a victim of this disease and has had five or six attacks. There are no doubt factors which precipitate attacks and possibly they are physical in nature, but as yet they are unknown.

In paranoia, the mental disorder that causes great trouble in the law courts, likewise little is understood. Hereditary factors are

certainly active and with care to detect and remedy abnormal mental "sets" early, something could be done to prevent 5 per cent of our admissions being due to this cause.

The same may be said for involution melancholia, the condition that is troublesome in women at the climacteric and in men about 50-60 years of age.

Epilepsy accounts for about 2 per cent of admissions and from present indications will soon be understood in a way to make prevention possible. Progress is slow—the disease has been recognized for over 3,000 years.

The various types of mental deficiency, of feeble-mindedness, accounting for over 4 per cent of admissions, are undoubtedly due to defective heredity in 50 per cent of the cases; and here eugenical control may ultimately have to be adopted either by sterilization of defects capable of propagation or by segregation. But disease or injury of the child before, during or after birth, is responsible in many cases, so that prevention must also rest upon more knowledge of childhood disease and injuries, better obstetrics and better nurture of children, making their conception and development more than a matter of accident such as they now too often are.

No one would doubt the value of continuance of the campaign for improved physical health. While a sound body is not the only requisite for a sound mind, it is, and must always be considered to be, a most important one. But while one would do nothing to lessen interest in physical health, surely more interest in mental health should be aroused in everyone. The elaborate care taken of school children's bodily health is in striking contrast to the little that is done in the way of investigating and maintaining mental health. It is no more likely to look after its own interests than physical health, and the latter has been the subject of almost meticulous care. At the present time astonishingly little is known regarding the formation of deleterious habits in children. The avenues along which their individual minds develop are so far nothing but dark alleys along which their groping minds stumble—often succeeding in getting through without serious trouble, but often, too, beset with misfortune that may influence them throughout life. More and more it becomes evident that the serious disturbances of mind that become evident in adult life are the overgrowth of abnormal mental "sets" originating in childhood. Childhood is the golden period for mental hygiene, but so far little advantage has been taken of it.

The development of children both in home and in school must be considered more seriously than it has heretofore. Too many parents are totally incapable of looking after the children they so willingly bring into the world. Long ago White spoke of childhood as the golden age for mental hygiene. The term took hold at once simply because of its inherent truth. We do realize that growing up is a decidedly complicated process, both physically and mentally.



Back of all that happens to every child, lies the misty, uncertain, yet certain, influence of heredity—but what do we really know about it? I must confess that, whilst far from abandoning it as an etiological factor, I do allot to it a lesser influence than I once did. But grant it whatever importance we will, we must admit that we know little of really practical value as yet, and the best we can do is to recognize it as a factor—a fixed quantity in the equation for some time to come.

With the intensive study that has been given to child study for the past ten years, we have accumulated an astounding array of observations, a very large number of which have ultimately attained the status of facts. And from these, we have come to see plainly enough that what is needed for each child that has started off in life fairly is “mental space and opportunity”.

Personality has the potentiality and does grow. Our business seems to be to provide the proper conditions of growth, and by these we mean, for instance, proper standards to imitate, proper suggestion at proper times, and judicious assistance in effecting the compromise between self and society that our civilization demands. In particular, this means the redirection and sublimation of the love of power, the providing of proper outlets for childish imaginings and childish savagery. And, even with childhood left behind, the physiological crises of life provide problems aplenty and against these we must assist in raising adequate safeguards.

Not only do the public need education in child nurture, they need some knowledge of their own mental lives so that they may make the business of living more useful and efficient.

The authorities in medical and nursing education are awakening up to the fact that the future doctor and nurse need to know more about Mind and Body than has been thought necessary heretofore. Both can be great agencies for good in promoting mental health. Lawyers and magistrates, too, need to know more about the human material with which they work. It is interesting to note that a course in mental hygiene for magistrates was initiated in England in the past year.

But the place where direct influence can best be brought to bear is the school. It is a place where the future adult should be taught not only to *know* but to *be wise* in the ways of Life. If one dared to criticize the school system, it would be on the ground that too much attention is paid to the accumulation of knowledge—to the cultivation of learning capacity and too little attention to feeling, control of will and instincts. At present the latter, undoubtedly the most powerful driving forces in life, are allowed to pursue their own way. The importance of the sexual instinct (in its broad aspect), the self preservation instinct, and the grouping instinct are, one believes, scarcely sensed by those in whose hands the destinies of children are placed. It is the way of Life that the urges arising from the instincts must be

moulded and redirected into socially compatible channels. Too often their development is unhealthy—arrest, free rein or disfigurement occur with results rarely confined to the period of childhood.

Surely the task of education is to mould and direct these forces as well as develop the capacity for knowledge. It must appreciate their importance—how they vary in different individuals, how deviations may be early recognized, how definitely child mentality influences the future adult character, how to close the wrong paths and open the right ones for the developments so necessary for human progress. It is not enough for a few people to know the facts in order to correct in children the faulty influences of an ignorant home education. It is only when everyone is seized with the importance of these principles that we may hope to avoid developmental errors, cease to do harm and perhaps do a little good.

The whole question of mental disease and defect is one of the most serious now facing society. The care of developed cases in institutions constitutes an exceedingly heavy social burden. The non-institutionalized cases are a constant source of trouble in schools, courts, social agencies and communities generally. Efforts at reclamation are worth while in a degree that would not have been believed twenty years ago. But the tide is slowly and inevitably rising. No wonder that those who are in a position to see what is happening, are alarmed. People generally are not perturbed to the same degree, but there are signs that they are beginning to scent danger and when they do become genuinely alarmed, what will happen? There is some danger, one believes, that, not knowing just where to look for the sources of trouble, much time and effort will be wasted in chasing chimeras. The time and money now lost in so-called research must in its totality be perfectly amazing. No one would think of denying research as useful, but in order to be truly useful it must be directed, and it must be pursued by those with the proper mental equipment, the proper background and foresight that permits the envisagement of the true nature of the problem, the relative proportion and importance of its parts and the multitudinous relationships with other problems.

It appears that the problem of prevention will find its answer in—

- (1) Adequate analysis of individual cases with most careful searching for and appraisal of possible causative factors.
  - (2) Bringing patients under investigation at the earliest possible moment—best obtained by enlightenment of the public and improved education of students of medicine and nursing.
  - (3) Continued investigation of apparently normal children and of the process of development.
  - (4) Research—carefully directed and carried out by those capable of producing worth while results.
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# L'Immunisation Antidiphtérique dans le Comté de Nicolet, P.Q.

J. ERNEST SYLVESTRE, M.D., D.P.H.

*Officier-Médical, Unité Sanitaire de Nicolet*

AU mois de février 1931, les lecteurs de ce journal pouvaient lire une communication sur l'immunisation antidiphtérique dans le Comté de Témiscouata, P.Q., communication envoyée par l'Officier-Médical de l'Unité Sanitaire de Témiscouata, Monsieur le Docteur J. C. Beaudet.

Sur l'invitation de mes supérieurs, je vous sou mets aujourd'hui un résumé de notre campagne d'immunisation dans le Comté de Nicolet. Le comté ne compte qu'une trentaine de mille de population. Notre procédé ressemble en tous points au procédé suivi par M. le Docteur Beaudet, avec cette seule différence que nous allons dans les écoles au lieu d'aller à domicile.

Nous avons parcouru onze paroisses en date du 1er. décembre 1930. Un relevé de Messieurs les Curés nous donne un total de 2929 enfants âgés de 6 mois à 12 ans. De ce nombre, 1880 enfants ont subi les trois injections préventives d'Anatoxine Ramon (toxoid) préparée par le laboratoire Connaught de Toronto. C'est donc 64 pour cent des enfants de ces onze paroisses qui ont bénéficié de cette campagne. C'est un résultat qui en vaut la peine. Ceci démontre que notre population rurale ouvre les yeux et fait bon accueil aux nouvelles données scientifiques.

Tout de même, si l'on fait le partage de ces enfants qui ont subi les trois injections, et si on considère que 865 enfants seulement avaient moins de 7 ans, on pourrait diminuer un peu cet enthousiasme que l'on ressent en face du résultat total. Car enfin, si les enfants de 7 à 12 ans sont plus exposés par leur fréquentation des écoles, ceux qui restent à la maison sont plus généralement emportés par cette terrible maladie. Il faut aussi penser que les tout petits ont probablement moins de chance d'avoir acquis l'immunité naturelle. Aussi, pour cette classe d'enfants, une proportion de 46 pour cent d'enfants immunisés ne nous paraît pas idéale. Nous nous proposons bien de diriger notre travail dans ce sens. Quoiqu'il en soit, la chose étant nouvelle pour notre population, nous acceptons les résultats acquis comme satisfaisants.

Comme résultat pratique, si nous comptons que 75% des enfants ayant reçu les trois injections sont sûrement protégés, nous avons donc 1410 enfants sur un total de 2929 qui sont protégés réellement contre la diphtérie. Ce qui fait un pourcentage de 48%. Ce nombre est suffisant, si nous y ajoutons les enfants qui jouissent d'une immunité naturelle, pour ralentir du moins la rapidité d'une épidémie.

En effet, si nous comparons les enfants aux anneaux d'une chaîne, il est évident, par ce résultat, que la contagion, dont le mode le plus important est le contact direct, se fera moins bien, car il y a des anneaux qui manquent à la chaîne. Ces enfants immunisés sont des isolants protecteurs qui interromperont la propagation du courant contagieux.

En fait, nous n'avons eu qu'un seul cas déclaré dans ces onze paroisses. C'était un enfant n'ayant pas eu les injections préventives. Seul dans sa famille à ne pas être immunisé, il fut le seul à développer la maladie. On ne révéla aucun autre cas dans son entourage.

RÉSUMÉ DE LA CAMPAGNE D'IMMUNISATION CONTRE LA DIPHTÉRIE DANS LE COMTÉ DE NICOLET  
EN DATE DU 1<sup>ER</sup> DÉCEMBRE, 1930

Localité	Nombre d'enfants de 6 mois à 12 ans inclusivement	Enfants ayant reçu les trois injections					
		Enfants au des- sous de 7 ans		Enfants de 7 à 12 ans inclus.		Total	Per cent en rapport avec le total des enfants de 6 mois à 12 ans
		Nombre	Per cent	Nombre	Per cent		
Lemieux.....	114	51	56	40	44	91	79.82
Ste. Marie de Bland....	194	62	55	50	45	112	57.73
Ste. Perpétue.....	396	131	46	150	54	281	70.95
Ste. Brigitte de S.....	310	82	43	111	57	193	62.25
St. Sylvere.....	380	93	57	69	43	162	42.6
St. Samuel.....	179	38	46	43	54	81	45.25
St. Raphaël.....	215	57	35	105	65	162	75.35
St. Pierre les Becquets...	355	137	46	161	54	298	83.94
Precieux Sang.....	132	47	42	65	58	112	84.84
Manseau.....	360	94	51	90	49	184	51.1
Becancour.....	294	73	35	131	65	204	69.86
Total.....	2929	865	46	1015	54	1880	64.18

## JOURNALS WANTED

*The Editorial Board would appreciate greatly receiving copies of the following issues:*

**1931—Jan., Feb.**

**1930—Feb., March, April, July, Aug., Sept.**

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*Postal charges will be promptly remitted.*

# Immunization Against Diphtheria in the County of Nicolet, P.Q.

J. ERNEST SYLVESTRE, M.D., D.P.H.

*Medical Officer, Nicolet County Health Unit*

IN February, 1931, there was published in this Journal an article on the progress of immunization against diphtheria in the county of Témiscouata, P.Q., by Dr. J. C. Beaudet, Medical Officer of the Health Unit of Témiscouata. As the progress of a similar campaign in the county of Nicolet may be of interest I am submitting a summary of the work accomplished. The county of Nicolet has a population of about 30,000 people. Our procedure resembled in every respect that used by Dr. Beaudet, with the exception that the work was undertaken in the schools instead of the homes. Eleven parishes of the county were completed by December 1st, 1930. The total child population, ranging in age from six months to twelve years, was 2,929. A list of these children was supplied by the parish priests. Of this number 1,880 received the three injections of diphtheria toxoid (anatoxine Ramon) prepared by the Connaught Laboratories, Toronto. In other words 64 per cent of the children in these eleven parishes have been reached by this campaign. This is a result which is well worth the effort. It indicates that our rural population is opening its eyes and is giving a good reception to these new scientific findings.

However, if these children who received the three injections are considered in groups according to age we diminish a little our enthusiasm. For of the total number, only 865 of the children were less than seven years of age. Children from seven to twelve years of age, the older age group, are more exposed to infection owing to their attendance at school, but those who are younger and who stay at home are more likely to die of this disease. We know that more than one half of all the deaths from diphtheria occur in the pre-school age group. One must also consider that the very little ones have probably less chance of having acquired any natural immunity. Forty-six per cent of the total number immunized were in the young age group and this does not seem to us to be ideal. Our work will be directed more definitely in the future to reaching this group. However, immunization against diphtheria being new to the people we consider the result as a whole satisfactory.

Placing a conservative estimate on the result, counting only that 75 per cent of the children who have received the three injections have been completely immunized, 1,410 children out of the total population of children, namely 2,929, are definitely protected against diphtheria. This gives a percentage of 48. This number is sufficient, if we add

to it the children who are naturally immune, to prevent, at least the occurrence of an epidemic. Indeed, if we compare the children to the links of a chain it is evident, according to this result, that the transmission of the disease by the various known routes, the most important of which is direct contact, will be less because there are some links missing in the chain. The immunized children interrupt the propagation of the contagion.

That this is true is evidenced by the fact that there was only one case of diphtheria reported in these eleven parishes. This was a child who had not received the prophylactic injections. The child was the only one in the family who had not been immunized and the only one to develop the disease. There were no other cases in the neighbourhood.

*The reader is referred to the summary table, see page 494.*

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### Loss of Light Through Dirt on Windows

Twenty to twenty-five per cent of the total light available at a window may be lost on account of dirt accumulated during the four month period between cleanings. This applies to windows in a comparatively clean location. In areas subject to more than average air pollution the loss of light may run from twenty-five to fifty per cent. The decrease in the light transmitting ability of glass due to dirt is not at a uniform time-rate, but is more rapid immediately after cleaning than when the glass is already dirty.—H. H. Higby and H. S. Bull, University of Michigan.



# The Influence of the Mortality Trends of Certain Diseases on Life Expectancy

DR. J. M. LIVINGSTON

*Medical Director, Mutual Life Assurance Company of Canada,  
Waterloo, Ontario*

PROBABLY all of you have read that the expectation of life has increased quite markedly in the last fifty years. We have good reason to believe that the increase during this period amounts to nearly twenty years for infants. This, however, does not mean that the span of life has been lengthened. In other words, a rather long life is now possible for a greater number, but our capacity to live to extreme age has not been increased. A study of change in mortality explains this. There has been a marked decrease in mortality in infants, children and early adult life; a gain of lesser degree has been made during middle life; but in advanced years almost no change has taken place. Thirty years ago the expectation of life at age 65 was a little less than twelve years, and it is still there.

In the last twenty years infant mortality has been cut 60 per cent. For the ages one to four years, the mortality in the last twenty years has decreased 70 per cent; for the ages 5 to 9 years, 60 per cent; and in the group 10 to 14 years, 35 per cent. Nine per cent of infants still die in the first year and probably two-thirds of the present number of deaths in infants can be prevented. There are three main causes of death in infants, *viz.*, (1) premature birth and allied conditions; (2) diarrhoea and enteritis; (3) pneumonia and bronchitis. These three causes account for about 70 per cent of infant deaths.

Expectation of life varies in different countries and in different races. New Zealand shows the greatest expectation, with about 64 years. In contrast, India shows only 23 years. North America shows about 58 years. It may be of interest to sketch the change in expectation which has taken place. Estimations made in the 18th century placed expectation of life at about 35 years. By 1890 it was 44 years; 1900, 48 years; 1910, 53 years; 1920, 55 years; 1930, 58 years. This change is not due to chance but is the result of intelligent effort of the people. There is no question but that the expectation of life can still be increased but improvement in the future is becoming limited. There is considerable doubt as to our ability to lengthen the life span. Fifty years ago the death rate was about 25 per thousand, now it is only 12 per thousand. This marked decrease in death rate is due to the influence of (1) public hygiene in controlling and preventing

communicable disease; (2) industrial hygiene which has lessened the accident and health hazard in the industrial group; (3) personal hygiene including periodic health examinations.

I have selected a few diseases and I would like to discuss briefly the changes in mortality that have taken place.

*Tuberculosis* was the first cause of death from 1850 to about 1900. It was third in 1920, and now it stands in the fifth place. It accounts for less than 6 per cent of deaths. The rate in Canada for this disease for 1930 was about 80 per 100 thousand. Thus there has been a reduction in mortality from tuberculosis of 64 per cent since 1911. Eighty years ago the Registrar-General for England stated that consumption was the cause of half the deaths between ages 15 to 35 years. In 1927 Louis I. Dublin, of the Metropolitan Life Insurance Company, traced the decrease in death rate from tuberculosis from 1900 to 1927 and predicted a rate of 70 per 100 thousand in 1930 and 40 per 100 thousand by 1937 for the Registration Area of the United States. The death rate from tuberculosis reaches its peak for females about the age of 25 years but not until considerably later for males. The rate for negroes is about six times that for whites. The rate among the industrial population is two or three times that of the general population. Nourishment is a definite factor in this disease, and I would like to remind you of the experience of life insurance companies. They have found that among insured young men 25 lbs. underweight with a history of a brother or sister dying of tuberculosis, about one-half of the deaths are from tuberculosis. Occupation also has a definite effect as shown by the Registrar-General of England and Wales. If one designates by the unit 100 the tuberculosis death rate among farmers and out-door workers, we can compare other occupations and find some astonishing results, viz.: coal miners, 133; bricklayers and carpenters, 225; clerks, 275; sailors, 325; hotel keepers, 350; stone getters and masons, 409; seamen, 456; lead miners, 495; sandstone workers, 728; barmen, 738; file makers, 761; cutlers and scissor makers, 819; tin miners, 1200.

*Heart Disease* now is the first cause of death, and causes one-sixth of all deaths. The death rate from heart disease has increased about 60 per cent in the last thirty years. While it is quite true more people now live to middle life, this does not explain the increase in rate, as apparently the hazard is greater. The probability of dying of heart disease at age ten is one in five and at this early age one is three times as likely to die of heart disease as from tuberculosis. There are probably ten living, impaired from heart disease, for each death from heart disease. Insurance companies decline about 2 per cent on account of heart disease, and it has been estimated that about 10 per cent of the adult population have some heart impairment requiring care. A five-year investigation programme is now being carried on in the United States in regard to heart disease, and it is hoped this will

establish the proper line of action. They are studying—(1) effect of infection including rheumatic fever, scarlet fever, etc.; (2) effect of toxic agents, as lead, alcohol, etc.; (3) effect of over-exertion as athletics and sports; (4) effect of nervous strain; (5) effect of an inherited factor.

One estimation of the cause of heart disease gives the following figures:

(1) hypertension.....	40%
(2) rheumatic fever.....	25%
(3) syphilis.....	10%
(4) miscellaneous group.....	15%
(5) unknown.....	10%
	<hr/>
	100

*Cardio-Vascular-Renal Disease*—If one considers deaths from cardio-vascular-renal disease the situation becomes even more impressive. Over one-third of all insurance deaths fall into this group. The rate for Canada in 1927 was 240 per 1000 deaths and 264 per 100 thousand living. You will notice that the rate for Canada varies considerably from the experience of insurance companies. This is due to the difference in age groups and to the fact that insurance companies select their policy holders. There was an increase in cardio-vascular-renal death rate in the registered area of the United States of 40 per cent from 1890 to 1920 and almost a 40 per cent increase in Canada in the last ten years.

*Cancer* stood fifth as cause of death in 1920 but is now in second position. Cancer accounts for 8 per cent of all deaths. The increase is mostly in males after the age of 45 and is found as cancer of the alimentary tract. There has been over a 50 per cent increase in the cancer death rate in the last 25 years and nearly a 25 per cent increase in the last 10 years. This increase can hardly be explained by (1) age or sex variation in population; (2) increased average age of population; (3) better diagnosis. Unless some effective measure is found, the rate will probably continue to increase up to a certain point and then become stationary, as it is in Switzerland and Denmark.

*Appendicitis*—Dr. L. F. Hoffman of the Prudential Insurance Company of America from a study of sixty American cities showed a death rate from appendicitis in 1910 of 13.3 per 100 thousand. In 1929 it has reached 18.0. This is an increase of 35 per cent. The present rate for the registered areas of the United States is about 15 per 100 thousand, and the rate for Canada is practically the same. That of England is only 7.3, and it has been the same for many years. In the past ten years the rate has increased in Canada over 15 per cent. I understand that few hospitals are proud of their death rate from appendicitis.

*Diphtheria*—Fifty years ago the rates of some cities were about 250 per 100 thousand. The present rate in Canada is about 10. In 1929 there were 981 deaths from this disease in Canada. It still accounts for about 9 per cent of the deaths in the age group 5 to 14 years. In this same group violent deaths stand first as a cause of death in males and account for over one-fifth of the deaths.

There are several factors that may have an influence on mortality, expectation of life and life span in the future. Eugenics has as yet not proven itself. The public health programme continued and developed further will undoubtedly have a definite and marked effect. Louis I. Dublin has shown that the increase in the expectation of life among the policyholders of the Metropolitan Life Insurance Company was double that of the general population for the same period. This is explained as due to the educational programme and nursing service of this organization. It would thus seem that expenditure on public health will pay large dividends. Better personal hygiene and periodic health examinations will also add something. Rejections of life insurance companies show that nearly 50 per cent have impairments indicating the presence or the coming of degenerative disease, and 90 per cent of these people were unaware of their condition. The Life Extension Institute recently reviewed 100,000 examination records and found: 80 per cent show focal infection; 22 per cent show kidney impairment; 17 per cent show arterial thickening; 6 per cent show sugar in urine; 3 per cent show organic heart disease; 1 per cent show signs of tuberculosis.

The British Committee reporting on examinations of 2,425,184 men for military service ages 18 to 42 years found of each 9—

- 3 were fit and healthy;
- 2 were upon a definitely infirm plain of health and strength;
- 3 were capable of only a moderate degree of physical exertion; in other words, they were physical wrecks;
- 1 was a chronic invalid with a precarious hold on life.

Dr. Oscar Klotz has said, "To admit that the rust of life makes its appearance at middle life is to admit that the human machinery failed to receive proper attention." A research effort is now being made in several centres towards establishing the cause, nature, prevention and cure of degenerative diseases. We have many real problems still. Cancer, pneumonia, pandemics of influenza, and the march of the degenerative diseases still await solution.

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# New Lamps for Old

R. B. JENKINS, M.D., D.P.H.,

*Medical Officer of Health, Edmonton, Alberta*

THE title suggests a "nigger in the wood-pile". So too does the writer's "Reduced Life Insurance Rates for Better Health Services", but in this instance there is no reason to keep the dark gentleman hidden. The old problem, so familiar to all health workers, of financing improvements in service, is the origin of the suggestion.

The holders of the public purse can be persuaded to put down new roads, as the need is usually obvious, and something tangible results. Growing populations and overcrowded schools make the demand for more schoolrooms apparent to all. We might go through each governmental activity finding similar examples and, occasionally, even in the section devoted to preventive medicine; but here we find our powers of persuasion taxed to the utmost. It is true that our proposals are sympathetically received but because the sphere of our activity is a markedly specialized one, the general public, accustomed as it is to judging the value of a service by the credit balance showing at the end of the year, cannot see the advantages to be gained by carrying out improvements in health services. Our best results are negative in character. We do not have so many cases of typhoid. We do not have so many cases of diphtheria. Our infant mortality is lower, etc. We may be satisfied that these better conditions are the result of our activities, but is the average taxpayer so convinced? Man lives in his own generation and is impressed only by the conditions as he finds them, failing to realize that his present comparatively fortunate state is the outcome of an accumulation of improvements. How many realize that not more than one hundred years ago it was a rare thing to see a face unmarked by smallpox; that now typhoid fever is becoming comparatively rare in modern communities?

## *Monetary Value of Preventive Medicine*

How many realize the monetary value of preventive medicine? A safe water supply relieves the community of the burden imposed by outbreaks of typhoid fever with their heavy bills for treatment, time lost from work and the loss of valuable lives. Diphtheria prevention is relieving the community of another burden. School hygiene is helping to build a sounder nation and is saving the taxpayer money because the fit child takes fewer years to get his education. Sewage disposal and sanitation add their quota to the community savings. Go through the list of public health activities, milk control, mental hygiene, infant welfare, etc., and financial gain can be shown to result from

each service, but as has been said before, the average man takes it all for granted.

If we show him the gain by comparing the present condition with that which existed before the improvements were made, or if we give an estimate of the cost of sickness (much of which is preventable) in this Dominion of ours with its population of ten millions, we make little progress. "The annual cost of sickness in Canada over three hundred million dollars"? A tolerant smile perhaps, greets this statement, but thoughtful interest is lacking.

Preventive medicine lacks the spectacular element which appeals so generally. We can show a lowering of the general death rate, lessened incidence of some of the communicable diseases, lowered case fatality rates, lengthened average span of life, but the work producing these results claims no public attention and the taxpayer has no means of knowing that much of the community's credit balance is so produced.

#### *How Prove Its Value*

How can we show him? One answer is suggested by the plan followed by fire insurance organizations who recognize any improvement in fire fighting or fire prevention service provided by a municipality by an adjustment of insurance rates in accordance with the quality of that service. Municipal authorities agree readily to provide funds for improvements when these are suggested by underwriters who can promise lowered insurance rates. Could not the same idea be applied to health services and life insurance rates?

In the interest of the public at large and for sound business reasons, many insurance companies have accepted the practice of spending considerable sums of money each year on health education and on health measures such as life extension work, periodic examinations, anti-tuberculosis campaigns and nursing services. The companies have accepted, in part at least, the principle of varied rates for varied health conditions in their different occupational rates; that is, a man employed in a more hazardous occupation pays a higher life insurance rate than the man whose occupation does not expose him to the same risks. It seems a small step to accept the idea that persons who are living in a well protected community should enjoy lower life insurance rates than those who are exposed to the hazards of unprotected community life.

#### *Standardized System of Rating*

Assuming that the idea is acceptable and practical the next point to consider is the method of application. To provide a standardized system of rating community health work, the American Public Health Association has developed an appraisal form which takes into account the various branches of the work whether operated by a health depart-



ment, by another official body or by voluntary workers. The work of each branch is set out in detail and a system of scoring is used to give a numerical value for services performed. For instance a total score of 160 is allowed for the communicable disease division.

The various phases of this work are scored according to the extent and efficiency of the service provided; reporting of diseases, investigation and recording, and the various other activities are considered separately and in complete detail. The other main divisions and scores are as follows: Vital statistics, 50; venereal disease control, 50; tuberculosis control, 90; maternity hygiene, 80; infant hygiene, 80; pre-school hygiene, 80; school hygiene, 120; food and milk control, 70; sanitation, 80; laboratory, 60; popular health instruction, 40; cancer control, 20; heart disease control, 20; total—1000.

### *Some Modifications*

This method of appraisal was devised by the Association's Committee on Administrative Practice. It is evident that a great deal of work and thought were given to the subject, but it is possible that for a project, such as is suggested here, some modifications might be considered necessary to make the valuation acceptable to all concerned if it were to be utilized as a part of the machinery for fixing insurance rates. It might be considered necessary to weight more heavily the sanitation factor, or, chlorination of the community water supply by an acceptable automatic process might be given more consideration; or, again, organization and efficient co-ordination of service might be considered to be worth a respectable score. All values, naturally, would have to be fixed by mutual agreement.

The idea is not new, for the foregoing was summarized by those who compiled the Appraisal form in the following paragraphs:

"The National Board of Fire Underwriters has developed an Appraisal form for rating the fire protection service of cities. Poor standing means higher insurance rates. Improved standing means reduced rates. Such an Appraisal form speaks in a language of dollars and cents that is unmistakable.

"Are we not approaching a time when life and health and accident insurance companies will differentiate in their rates between cities with organized business-like health service and those with ill-equipped or disorganized machinery for public health protection?"

Though the idea is not new, the writer offers no apologies for this article which is written in the hope that health workers throughout Canada will endeavour to obtain from insurance companies acceptance of the principle, and will also work toward the creation of an appraisal bureau either by the federal government or by associated insurance companies.

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# Cutaneous Myiasis in Canada

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CUTANEOUS myiasis is an infestation of the skin and subcutaneous tissues by the larvae of certain species of flies which feed upon these tissues during their period of growth, causing great suffering and often leading to secondary bacterial infections. This disease occurs most frequently in the warmer parts of the world and, until about twelve years ago, was practically unknown in Canada, such cases as may have been observed by medical men having been seldom, if ever, reported.

Since 1919, however, eight\* cases of cutaneous myiasis in infants have been brought to the writer's attention from Canadian localities; six from Toronto, one from Brantford, Ontario, and one from Winnipeg, Manitoba. All of these cases were doubtless due to the same species of fly, viz., *Wohlfahrtia vigil* (Walk.), this belief being based upon the following grounds:

(1) From four of the six Toronto cases adult flies were reared and all of these proved to be *W. vigil*.

(2) From all but the Brantford case and one from Toronto larvae were examined and were recognized as belonging to *W. vigil*, the three larval stages of which are now well known.

(3) The clinical picture, which is characteristic, was typical in the Brantford case, as described by the physician in charge.

All of these cases of myiasis occurred in infants under one year of age, the oldest one being five months old, and all presented a similar appearance. Small abscess-like lesions develop most commonly on the neck, chest, shoulders and arms, but eruptions have also been observed on the eyelids, cheek, palm and navel. Each lesion shows as a red, raised indurated mass measuring from one quarter to one half inch in diameter. The small opening at the apex of the lesion is so strongly suggestive, in appearance, of pus, that on superficial examination a group of lesions might readily be considered impetigo; in fact, the diagnosis of impetigo was made erroneously in at least one of the cases recorded. On closer examination it is readily seen that what appeared to be pus, is in reality the posterior end of the larva. This may be seen to be moving, being extruded and withdrawn; if pressure is exerted the larval body may be forced out. It can be seen to work its way by a wriggling movement along the skin surface. In most cases about twelve or fourteen of these lesions were present, each with an external opening, and each containing one or more larvae. In the

\*Since this paper went to press further inquiries have resulted in the reporting of some eight additional cases.

most recent case at Toronto (1931) at least five larvae were removed through a single opening, and in another Toronto case (1930) about forty lesions were present on the body from some of which four and five larvae were taken.

In earlier stages a slight macular rash may be present and at this time the young larvae, 2 to 3 mm. long, may be found wandering over the surface of the skin. This wandering habit has been observed also in the case of larvae reared upon liver. It thus appears that the



Male infant, 5 months old, infected with larvae of *Wohlfahrtia vigil* (Walk.).

larvae may penetrate the skin at points distant from those where they were deposited by the parent fly.

The development of the larvae is very rapid, though variable. Scarcely more than 2 mm. long when born, they reach a length of about 20 mm. in from four to twelve days. In another day or two they burrow into the earth and become puparia (pupa enclosed in the hardened larval cuticle). After about 18 days in this resting stage they emerge from the ground as adult flies. There is evidence that some pupae may remain in the ground for a year before emerging, this being certainly true of some other flesh-flies.

There may thus be a number of generations in a year. Most of the cases of myiasis due to this fly have occurred in June but one was in September and the adult flies have been taken at various times during the summer months. Though somewhat rare, they may be expected in almost any part of Canada as they have been found from the New England States to Alaska. A large number of specimens was recently collected on the north shore of Lake Abitibi, along the railway track.

*Wohlfahrtia vigil* is one of the flesh-flies (Sarcophaginae), a group of dipterous insects nearly related to the house-fly and the blow-fly or

"bluebottle". There are many species of flesh-flies in Canada, chiefly members of the genus *Sarcophaga*, but they are of little or no medical interest, although one species (*S. haemorrhoidalis*) is occasionally responsible for cases of intestinal myiasis. They breed for the most part in decomposing organic matter, such as manure or carrion, each species having its own preferences as to food materials, but all the family are alike in that they deposit living larvae or maggots instead of laying eggs as do the majority of common flies. These maggots differ from those of most ordinary flies in having at the broad posterior end a deep pit into which open the two large spiracles or breathing pores. In most flies these openings are flush with the surface. The common flesh-flies (species of *Sarcophaga*) are large, gray, somewhat hairy flies, usually much larger than a house-fly which they otherwise resemble in general appearance. The back of the thorax, or region behind the head, which bears the wings and legs, is grayish with dark longitudinal stripes and the abdomen is marked like a checker board.



*Wohlfahrtia vigil* (Walk), male (X2.8); the fly whose larvae are the cause of cutaneous myiasis of infants.

*Wohlfahrtia vigil* can be readily distinguished from these common flesh-flies by the pattern of the abdomen, which is not checkered but white with two rows of confluent black spots. Otherwise it looks just like a good-sized *Sarcophaga*.

It is not the only species of *Wohlfahrtia* that is known to cause cutaneous myiasis in human beings. An old-world species, *W. magnifica*, is well known in southern Europe, and parts of Asia and North Africa on account of this habit. But it differs from our species in that the larvae are never known to enter the host-tissues through the unbroken skin but always through sores or infected wounds, or by the natural openings, such as the nose, mouth, ears or eyes. In this respect *W. magnifica* resembles the "screw-worm" fly (*Chrysomya macellaria*) of the warmer parts of both American continents, and, in fact, most flies that produce cutaneous myiasis.

*Wohlfahrtia magnifica* is a specific myiasis-producing fly while *W. vigil* has been hitherto regarded as only semi-specific. The writer<sup>1</sup> suggested that the parasitic habit was probably abnormal because of

<sup>1</sup>Journ. Paras. (1920) VII, p. 7.

the small size of the spines of the larval skin, which aid in locomotion. These are usually better developed in parasitic fly larvae than in those which live in decomposing substances. Patton in his recent text-book<sup>2</sup> appears to have no doubt regarding this point, because of the ease with which the larvae were reared when transferred to meat. He admits, however, that the habit of penetrating the healthy living skin is a most remarkable one for a normally carrion-feeding insect to possess.

On the other hand the larvae of *W. vigil* have never been found in carrion except in connection with laboratory experiments, while this species has been recorded as a parasite not only of man but also of the rabbit<sup>3</sup> and fox<sup>4</sup>. Moreover, recent experiments by Dr. Norma Ford of the Department of Biology, University of Toronto, give further evidence that it is definitely a species of parasitic habit. A gravid female took no interest in the pieces of liver, both fresh and in various stages of decomposition, which were kept constantly in the cage, but was definitely attracted in the presence of a guinea-pig or rabbit and deposited a number of larvae in the vicinity of the eye, although these were scratched off vigorously by the animal. Five weeks later the same fly, now old and decrepit, again became pregnant, but this time, unable to maintain its hold upon the guinea-pig's fur, was forced, after all, to deposit its young upon liver. In feeding experiments the flies were never attracted to meat but always to milk, sugar, flowers and other sweet substances.

*Prevention and Treatment.* Children sleeping out-of-doors, especially during the summer months, should be carefully screened. This is important, even when the strictest cleanliness is observed, since the flies, contrary to opinions sometimes expressed, do not appear to be attracted by the odours of decomposing substances. The presence of pimple or boil-like lesions on the face, neck, chest, arms or other parts liable to be exposed during sleep should suggest the possibility of myiasis, in which case the larvae should be removed immediately, using antiseptic precautions. The larvae may generally be squeezed out through the external opening, no incision being necessary.

In conclusion the writer wishes to express his thanks to Dr. Norma Ford for permission to include in the present paper some of her unpublished observations and experimental data, and to Dr. N. E. McKinnon for notes on the clinical aspect of the cases described above.

The following questionnaire is appended in the hope of obtaining more information on the occurrence and distribution of cutaneous myiasis in Canada or other parts of the continent. Any data that can be furnished relative to this disease will be most gratefully received. They may be sent either to the writer or to Dr. Norma Ford, Department of Biology, University of Toronto.

<sup>2</sup>*Insects, Ticks, Mites and Venomous Animals. Part I Medical* (1929, p. 2.

<sup>3</sup>Johannsen, O. A. (1926) *Journ. Paras.* XIII, p. 156.

<sup>4</sup>Kingscote, A. A. (1931) *Rep. Ont. Vet. Col.* 1930, pp. 38-39..

## QUESTIONNAIRE

1. *Where did the case occur (exact locality)?*.....
2. *When did the case occur (month and year)?*.....
3. *What was the patient's age?*.....
4. *What was the appearance of the disease?*.....
5. *How many lesions were present and how were they distributed?*  
.....
6. *What was the general condition of the patient?*.....
7. *Did you preserve any of the larvae?*.....
8. *If additional cases are met with, please place some of the living larvae on raw meat, preserve some in 70 per cent alcohol and send these specimens as directed above.*

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### The "Utopia" of Sir Thomas More, 1516

"Here are a dozen of the characteristics with which Sir Thomas More furnishes Utopia—suggested to his mind by his knowledge of London as it was and his interpretation of what ought to be:

- (1) The city is soundly builded, its streets are broad, and behind all its houses lie fruitful and beautiful gardens cultivated by the occupiers; there is a public water supply, drainage and municipal cleanliness;
- (2) Slaughtering of animals for food must be conducted in public abattoirs provided outside the town;
- (3) There are public hospitals for the efficient treatment of rich and poor, and isolation hospitals for cases of infectious disease, both outside the town;
- (4) There are communal meals, with fruit, dessert, music and lectures;
- (5) Maternity is especially cared for and there are municipal nurses for infant welfare;
- (6) Nursery schools (or crèches) exist for children under five;
- (7) Free universal education for all children, with continuation, adolescent and adult schools;
- (8) All education by the State is to include Natural Religion built on Nature and Reason;
- (9) Education is to be directed to the attainment of physical and mental health;
- (10) Vigorous and lively health is dependent on obedience to the laws of Hygiene, undisturbed and vigorous constitution of body, a temperate course of life, cleanliness, living in the fresh air and sunlight, with abundant and active occupation, but not too prolonged;
- (11) Enlightened marriage laws and marital selection;
- (12) Industrial welfare.

They entertain themselves with the delights let in at their eyes, their ears and their nostrils as the pleasant relishes and seasonings of life, which Nature seems to have marked out for man, since no other animal contemplates the figure and beauty of the universe . . . Yet in all pleasures whatsoever they take care that a lesser joy does not hinder a greater . . . The people are industrious, apt to learn, as well as cheerful and pleasant, and none can endure more labour when it is necessary."—*Health and Social Evolution*—Halley Stewart Lecture 1930—Sir Geo. Newman, K.C.B., M.D., Hon. D.C.L., L.L.D., 1931.



# Peter Ludwig Panum

## 1820-1885

A PIONEER IN THE EPIDEMIOLOGY OF MEASLES

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IN the early half of the year 1846, in that little group of sleet-swept, barren islands which are isolated in the North Sea and known as "THE FAROES" there appeared a malignant epidemic of measles of such severity that no less than 6000 out of a total population of 7782 were stricken with the disease. Of the number afflicted, 102 perished as a result of the disease or its sequelae.

The Danish Government was dismayed. The immediate appointment of a skilled investigator was necessary. It is significant that they did not select a Senior from the Royal College of Health, or a medical politician, but instead they appointed Ludwig Panum, a comparatively unknown young man of twenty-five years of age, one who had graduated from Copenhagen only the previous summer. The few facts that were recorded about the young appointee at that time were—that he had been born at Ronne, on the 19th of December, 1820; that he was the son of a regimental physician who had at one time been stationed at Schleswig; that he had attended the gymnasium at Flemsburg, and that he had been admitted to the University of Kiel in 1840. He stayed a year at Kiel and then moved to Copenhagen where he studied to such good purpose that he passed the state examination in the summer of 1845, some months prior to the date at which he enters our picture. The Government knew they had chosen an untried man. Still they were also aware of his general capacity, his tact, his medical sagacity, and that he possessed what was probably more noticeable to the Faroese than any of the qualities above mentioned, a pleasant, sincere personality.

To convey some insight into his probity, and to point out how he had forecast the development of epidemiology as a separate science, let me quote a few paragraphs from a translation of the introductory pages of his report on the Faroes epidemic. He writes: "When a physician is called to work in a place where climatic and dietetic conditions are different from those to which he has been accustomed, his first problem is to study the hygienic potentialities which affect the state of health of the inhabitants. It is, in fact, these hygienic con-

ditions which contribute towards the development and frequency of some diseases and the improbability and rarity of others, and which, more or less, modify the symptoms of every disease, and it is indeed on these conditions that the geography of disease, the special study of which subject will soon, perhaps, elevate it to the status of an independent science, is based.

"Since the outbreak of the measles provided the occasion for my journey to the Faroe Islands, it is natural that I directed my attention at once to the influence which the extremely peculiar hygienic conditions of the Islands exerted upon this disease and *vice versa*. But, since, during my sojourn of almost five months on the Faroes I repeatedly travelled over the greater part of the Islands, I was thus in a situation to make a great many observations in regard to the influence of the special hygienic conditions upon the state of health in general, as well as upon the frequency and development of the prevailing disease. To be able to give a complete nosography of the Faroes a stay of several years would be necessary; what I here communicate consists of only some nosographic fragments, which may, perhaps, be interesting merely because so little is known about conditions on the Faroes in this respect.

"I shall then, try to set forth here the hygienic forces proceeding from the conditions on the islands, and as far as the observations I have been able to make permit me to do so, I shall attempt to show the influence which each of these forces in particular exerts on the state of health in general of the inhabitants—on the frequency, development and method of propagation of the different diseases, together with the mortality rates of the country, which I shall also seek to illustrate further by statistical data collected during my sojourn on the Islands. In another section I shall then present some observations in regard to the measles, inasmuch as they may be of general interest to the medical public."

The report then continues with a careful description of the location of the Islands, the nature of their terrain and the unfavourable climate with its prevailing low, barometric pressure, and driving, salty North Sea mists. He proceeds in easy fashion to write of the flora, the fauna, the soil with its agricultural potentialities, the rivers, fjords, and the hills and then attempts to relate the physical characters of the country to the temperament of the Islanders. In the following sentence a graphic touch from his pen is indicated.

"The reader is requested to excuse me, if in this description, I have been more verbose than might, perhaps, seem to be suitable here; but I believe that all the circumstances cited, especially those in regard to the character of the landscape, have a not inconsiderable influence on the condition of health of the dwellers on the Faroes, and that this circumstance is to be rightly sensed first through a somewhat detailed description of circumstances that exist there."



THE FAROE ISLANDS IN THE NORTH SEA

Nor does he cease the record of his observations until he has commented on the activities of the inhabitants, their food, their attire, and the chronic ailments of the Faroese. He discusses at some length the social customs and religious superstitions and makes an attempt to correlate his observations with the incidence of psychoses among the natives. He analyzes the eating habits and diet with special reference to the causation of the numerous gastro-in-

testinal complaints with which the people are troubled. He sees in the smoke-filled huts the probable cause of their respiratory distress. He quotes with great care and accuracy the mortality-rates together with the average length of life as reported in the censuses of the preceding sixty years, and proceeds to discuss the causes affecting the low mortality rates among these island folk. He writes,—“Without so far having found any factor to which on closer scrutiny might be ascribed any essential importance in this respect, we are led to accept the assumption that the entire or partial exemption of the Faroe Islands from a number of diseases, especially those which are infectious, which decimate the population of other countries, is the most important of all causes of the favourable rates on these islands, and the high limit of life of the inhabitants”.

Among the rarities, it is interesting to note that he found practically no tuberculosis, no cancer, no Bright's disease, no malaria, no scarlet fever, no whooping cough; whereas, among the commoner infections, he mentions the high incidence of scabies, influenza, typhoid, typhus, and the appearance of twenty cases of syphilis traced from one case observed for the first time two years previously.

His observations on the system for the control of smallpox, then in vogue on the island, is very timely and makes interesting reading even to-day. He writes,—“Smallpox last prevailed on the Faroes as far as I know in 1705, and at that time caused great devastation, in regard to which accounts are still current among the people. It is related that the whole population of Skuø perished from it. At present it might be hoped that such a calamity might be at least partially

prevented by vaccination. It is obvious, however, that the physical character of the country renders it peculiarly difficult to carry this out satisfactorily. It could scarcely be done in any other way than for the physician to divide the islands into perhaps five districts and to look after the vaccination in one of these by turns, each year, by making a double tour so that he could manage to reach each village twice, with eight days' interim,—the first time to perform the operation, the second time to learn the results. But it would be unreasonable to require such an inconvenience of the appointed physician without a corresponding remuneration, since, apart from other hardships, by such a long absence from Thorshavn as would be involved, he would lose a part of the income from practice which would be due to the medical practitioner. This much, at least, is clear, that vaccination such as is now performed on the Faroe Islands is entirely unreliable and aimless. The fact is that it is delegated to a rustic to travel about in the country to vaccinate the children. He is provided with a needle or lancet and is instructed how to perform the operation. This rustic then engages in each village a man that can write, to inspect the children eight days after vaccination, and to write to the Provincial Surgeon whether the vaccine has taken or not. However, since on the one hand it is quite doubtful, in fact, in many cases improbable, that the man who is to inspect the children has ever seen a characteristic, vaccine pustule; and on the other, since there is a question as to whether to serve his neighbour or countryman he is not capable of telling a slight falsehood, seeing that the inhabitants are loath to have their children vaccinated because they fear the grafting in of foreign diseases, and so on, it may be easily perceived what is to be expected of such control. If then a complete reform is to be effected on the Faroe Islands in respect to vaccination, the procedure must be properly carried out for all persons without exception, so that certificates of vaccination hitherto issued should excuse none from this slight operation".

It was, however, his work on the epidemiology of measles that made his report a contribution of unusual merit. He presents an epidemiological and a statistical analysis of the epidemic based on the data he collected.

#### *Epidemiological Deductions*

"The isolated situation of the villages and their, on the whole, limited intercourse with each other made it possible, in many—in fact, in most—cases, to discover where and when the person who first fell ill had been exposed to the infection, and to prove that the infection could not have affected him either before or after the day stated. The first person on the Faroes who took the measles was a cabinet-maker now living on Thorshavn. He left Copenhagen on the 20th of March, and reached Thorshavn on the 28th. On the journey he had

felt quite well, but was attacked by measles early in April, on what day he did not know. Shortly before his departure he had visited some measles patients in Copenhagen. About fourteen days later his two nearest associates were attacked." These facts, unearthed by Panum prior to his departure from Thorshavn, stimulated him to investigate the duration of the incubation period during his travels about the Island. From the evidence which he collected he made the following deductions:

1. "The rule that the contagion of measles does not, for a considerable time after it has been received into the organism, produce any symptoms at all, and then, after an indefinite prodromal period, according to my experience, always the 13th or 14th day, brings forth the well-known exanthema, has thus in an important series of accurate observations proved constant for me. It further appears that such external conditions as the constitution and diet of the patient are never able to hasten or retard the eruption of the rash more than about 24 hours beyond the normal time for it."
2. Measles is extremely infectious during the period of efflorescence, whereas its infectiousness in the prodromal and desquamating stages is doubtful. This statement is qualified by this quotation,— "I saw not a few cases in which it was supposed from the statements of the patient that they had only been in contact with persons who had prodroma". He explained these apparent contradictions by stating that he could not be positively sure of the patients' statements that there was no exanthema present, since in every case the full-blown rash appeared either a day or so later, and the people were often efflorescent and were not aware of it.
3. "It is remarkable that of the many old people still living on the Faroes who had not had the measles in 1781 very few escaped infection on exposure, whereas not one as far as I could learn by careful history was attacked the second time if they had suffered an attack in their youth."
4. The disease was transmitted from place to place by persons and did not jump about. Measles was purely contagious, he considered, and never miasmatic.
5. The disease had not lain dormant on the island, nor developed spontaneously, but had been brought to the island by an infected individual.
6. Measles may be transferred by clothing.
7. Measles may be controlled by isolation and quarantine.

#### *Statistical Analysis and Summary*

"Measles had not prevailed on the Faroes since 1781; then the disease broke out early in April, 1846. Of the 7782 inhabitants, about 6000 were taken with the disease in the course of about half a year. From the beginning of the year to the middle of September, 255 persons

in all, died, of whom at least 102 died of measles or its sequelae. Since I have no very accurate statistical data for Suderø, which Dr. Manicus has taken care of, I shall here give account only of the other islands, comprising six parishes, with 6626 inhabitants, of whom about 5000 had measles.

"From the beginning of the year 1846 until the epidemic had ended, 215 had died in those parishes, among whom 164 died under the epidemic, the duration of the latter being calculated separately for each village,—and of these 78 were victims of measles or its results. It must, however, be observed withal that the number of those who died as far as measles is concerned in Sydstrømø, seems to be set too low. The fact is that in this parish I had to depend on the Church registers where measles is given as the cause of death in but twelve instances. But if the Church registers also show that of sixty-eight individuals who died on Sydstrømø from the first of the year to July 30th, 64 died between April 21st and July 21st, during which space of time the measles prevailed there, whereas according to the average count for the years 1835-1845 inclusive, only 23.8 persons usually die yearly on Sydstrømø, it is unlikely that only 12 should have been taken off with measles. This is the more extraordinary because, of the 64 dead, 45 had lived in Thorshavn (800 inhabitants) where both the physicians of the country live, and in accordance with instructions report the cause of death to the priests, who record them in the Church registers. In all the parishes where I had been able by dint of personal visit and enquiry to obtain more reliable information it was found that between one-third and one-half of those who died in the course of the year were carried off by measles or its sequelae, except in Sandø, where the measles demanded no sacrifices."

"Therefore if we ascribe to an epidemic beginning with the arrival of the ship some effect upon the mortality, it appears to me as probable that the actual number of deaths from measles was between 78 and 164; in the first case, there would have been one death among 64 measles patients, and in the other case, one among 30.5. While the ratio of deaths to the total number of people, which in Denmark is, according to the average calculation for 1801-1834:—1 in 41.22; for the Faroes, according to the average computation 1835-1845, is usually 1 in 64.66; it is here found to be 1 in 31.1 in only the first two-thirds of the year 1846.

"The facts show that the measles, perhaps in connection with the epidemic of influenza which prevailed with it in the spring, was destructive to the young child under one year of age. On the other hand, the mortality rate between the first and twentieth years did not increase. The mortality rose from the thirtieth year until it became greatest for the age between 50-60 years, that is—five times as great as usual; after which it again descends, not because the disease is less dangerous for those still older, which was by no means the case, but because it



was precisely sixty years before that the measles had last prevailed on the Faroes and that those who had recovered from the disease at that time were now immune."



Shortly after Panum's return to Copenhagen he met Professor Virchow who published the full report in the first volume of the Archives. During the ensuing years Panum's recognition and progress were rapid and unrestricted. He was at one and the same time, acting as Professor of Physiology, Chemistry and General Pathology at Kiel. His curriculum was brought up to a high state of efficiency

and his courses became unusually popular with the student body. In 1864, after the death of Esricht, he took the chair of Physiology at Copenhagen and retained that Professorship for the next twenty years. During this period his contributions to physiology, public health and sanitation, pathological chemistry, dietetics, and both medical and lay education were enormous. A glance at his very extensive list of publications is proof of his energy and the quality of his authorship. The portrait of Panum, which we have the pleasure of publishing, is a likeness of the man at this particular period.

In 1884 he was elected President of the International Medical Congress in Copenhagen on which occasion he delivered an excellent paper, entitled: "Researches concerning Food Rations for Men in Health and Disease, particularly in Hospitals, Infirmarys, and the Prisons of different Countries". It was at this session that Pasteur presented his results on the use of anti-rabic vaccine. Panum's paper and his chairmanship reflected great honour upon his University and himself. As D.B.D.<sup>3</sup> has written: "the presidency of that distinguished body required a man of deep learning, great executive ability, the skill of a diplomat, and the thorough savoir-faire of an accomplished man of the world." Professor Panum possessed all these qualities.

On the evening of the first of May, 1885, while returning home from a visit, he was seized with an attack of acute anginal pain, so severe that his medical counsellor, Professor Frier, could not relieve him with opiates or any other means. The excruciating pain in his chest radiated to the fingers of his left hand and he was forced to use his entire will to prevent uttering exclamations of pain. His mind was clear the whole time and he even made jesting remarks about the inability of medical science to relieve his sufferings. During the following morning he presented his son with an explanation of his symptoms of the previous evening and remarked that he felt better. However, an hour or so later, with scarcely any warning he suddenly expired. An autopsy by Doctor Dahl revealed a coronary sclerosis with occlusion and a rupture of the myocardium.

Thus died a pioneer in epidemiology and a true medical scientist, whose learning and energy the medical profession of to-day and to-morrow would do well to emulate.

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# A Tribute to Wyatt Galt Johnston, M.D.

M. P. RAVENEL, COLUMBIA, MO.

*Chairman of the Wyatt Galt Johnston Memorial Committee,  
American Public Health Association*

Address delivered at Mount Royal Cemetery, Montreal, on the occasion of the laying of a wreath on the tomb of the late Dr. Wyatt G. Johnston by members of the American Public Health Association at the opening session of the Sixtieth Annual Meeting under the Presidency of Surgeon-General Hugh S. Cummings in Montreal on September the fourteenth, 1931. There were present on this occasion Mrs. Johnston, her son and a number of Dr. Johnston's old associates and friends. The wreath was laid by Dr. C. L. Martin, Dean of the Faculty of Medicine of McGill University.

**W**YATT GALT JOHNSTON, Professor of Hygiene at McGill University in 1902, was the son of a doctor in Sherbrooke, in the Province of Quebec. He received his early education at Bishop's College, Lennoxville, and subsequently was graduated from the Faculty of Medicine of McGill University in 1884.

As an undergraduate, his interest in pathology brought him into close association with Osler. Following upon his graduation, he worked under Virchow in Berlin, returning to Montreal to be appointed a demonstrator in pathology at McGill.

Later, at the Montreal General Hospital, he devoted himself to the subjects of pathology and bacteriology, and soon became actively interested in medico-legal work. His command of these subjects was speedily recognized both by his university and by the bureaux of health in the province. Not only was he appointed a lecturer in bacteriology at McGill University, but the Provincial Bureau of Health of Quebec named him as Bacteriologist, and he was made Coroner's Physician for the District of Montreal.

Within ten years of his graduation, he was a leading authority on the subject of medical jurisprudence and a pioneer in the teaching of this branch of work.

Few men of his time in Canada contributed so much and such valuable research in the field of public health. Among his more important contributions may be mentioned "A new method for the culture of diphtheria bacilli on hard-boiled eggs"—a practical method of rapid diagnosis for the determination of diphtheria. It was in this connection too that, in 1892, he introduced the use of sterilized swabs in test-tubes for the taking of cultures. Writing that year, Doctor Johnston spoke

as a prophet when he condemned "the practice of withholding antitoxin until the diagnosis of diphtheria is clear", adding that "probably a large proportion of the deaths from diphtheria arose from delay in the use of this remedy. One would think it better that the remedy should be given 99 times to persons not having diphtheria than to omit it in one genuine case." Surely the prompt giving of diphtheria antitoxin was never more strongly urged, and this too, at a time when its value and harmlessness were still matters of doubt.

The value of the bacteriological diagnosis of leprosy received Doctor Johnston's attention, and he urged its practice.

A biological analysis of Montreal's water supply led him to recommend regular and frequent examinations, for which he devised a method of collecting water samples at various depths—a distinct and practical contribution to public health work.

Doctor Johnston's memory has a particularly happy connection with the American Public Health Association, for it was at the Buffalo meeting in 1896, that he presented his paper—"On the Application of the Serum Diagnosis of Typhoid Fever to the Requirements of Public Health Laboratories". His work was synchronous with that of Widal, although in the matter of priority of publication, Widal was the more fortunate. It was to Doctor Johnston, however, in these early years, that we were indebted for a very practical method of applying the Widal reaction for typhoid fever. In his communication he says: "Instead of taking the serum as soon as it exuded, I allowed the drop to dry on pieces of paper, and found that, upon moistening it, subsequently, the solution obtained was just as efficacious as the pure serum for the purpose of the test." Its use became wide-spread and enabled the easy transmission, by post, from afar, of blood specimens to his laboratories, to the great satisfaction of rural practitioners.

When in 1902 (the year of his death) he became Professor of Hygiene at McGill University, he had attained the summit of his career as bacteriologist, pathologist and expert on public health, while at the same time, he was the accepted authority in the field of medical jurisprudence. To quote from Professor Welsh, "he was the outstanding authority in America"; while, as an original thinker, his researches were conspicuous by their brilliancy and their integrity.

Most of all, Johnston is remembered by his contemporaries for his lovable disposition, his brilliant humour and his manly qualities.

This simple record of the man's life reflects, in some degree, his qualities and his character, but the lasting quality of his work and the survival of his personality depended still more upon the vision and nobility of character of the man himself. It was his rare nature that gave his life's work its peculiar significance, and this was appreciated even more deeply by the members of his profession and his many friends. Love of truth, sincerity of purpose, and human understanding were among the guiding principles of his very existence.

# Editorials

## CUTANEOUS MYIASIS IN CANADA

THE survey of cutaneous myiasis in Canada,<sup>1</sup> which appears in this issue, is of great interest to every physician. How many cases of this condition have occurred it is impossible to say. That some cases have not been recognized appears a certainty. The fact that several cases were located in one community in one season, that cases have been recognized in other years, and that definite evidence of similar cases has come from several distant communities suggests that infestation of the skin of infants with the living larvae of *Wohlfahrtia vigil* (Walker) occurs throughout Canada much more commonly than is generally supposed. Dr. Walker's contribution will undoubtedly suggest the correct diagnosis of cases heretofore erroneously diagnosed. It is fortunate that in a condition so distressing in appearance a complete cure is so readily effected.

It is hoped that physicians who have had cases or have cases will co-operate, through the questionnaire, with Dr. Walker and Dr. Ford.

R. D. Defries.

## HISTORICAL ARTICLES

BELIEVING that the publication from time to time of descriptive, historical articles concerning the life and work of some of the great contributors to our knowledge of medicine, more particularly preventive medicine, two papers have been published during the year in this Journal. Both of these articles have been contributed by Dr. J. L. Little, formerly of the University of Toronto, now of Formosa, Japan.

In the first article, the fundamental observations of John Snow in regard to the nature of communicable diseases were presented; the second article which appears in this issue concerns the work of Ludwig Panum. Panum's "Observations made during the epidemic of measles on the Faroe Islands in the year 1846" is the record of one of the finest epidemiological investigations ever published. A contemporary of John Snow, Panum, too, correctly interpreted the nature of commun-

<sup>1</sup>Cutaneous Myiasis, E. M. Walker, M.D., *Canadian Public Health Journal*, October, 1931.

icable diseases and postulated the necessity for a living organism as a causative agent, the correctness of which view was confirmed more than thirty years later by the researches of Pasteur. To Panum we owe the salient facts of the epidemiology of measles. Dr. Little's review of Panum's work shows clearly how these facts were established in 1846, facts which must be remembered to-day if we are to be successful in reducing the number of measles deaths which occur all too frequently in the young age group. The original record of the Faroe Islands' epidemic is a classic. Unfortunate it is that it has remained hidden in the Bibliothek for Laeger of Copenhagen for so many years. We are indebted to Dr. W. H. Frost, Baltimore, for having a translation made of this most valuable study which, though old in years, is as modern as our knowledge of to-day.

R. D. Defries.

## TUBERCULOSIS—OUR GREAT PUBLIC HEALTH PROBLEM

A RECENT analysis<sup>1</sup> of tuberculosis deaths among industrial workers which shows that the decline in this group in Canada is definitely less than the decline in similar groups in the United States is as valuable as it is disquieting. With the decline in tuberculosis mortality, so that tuberculosis now occupies fourth or fifth place as a cause of death, there has been possibly a tendency to regard the conquest of tuberculosis as, to some extent, accomplished, a tendency to congratulate ourselves on our work and consequently to slacken our efforts. The general physician has heard a great deal about the decline in tuberculosis mortality and, seeing less of its menace than he did thirty years ago, he, along with the public, has lost some of the fear of it—if not the interest in its control. Tuberculosis is to-day our greatest public health problem. That statement seems, at first, an exaggeration. When one considers, however, that tuberculosis is claiming more deaths than any other disease in the whole age group of 15 to 49, the period of life when the maximum investment has been made in the individual, when the individual is most required in the community, and when he is the greatest asset of the community, the fairness of the statement must be admitted. When one adds to the present problem the fact that every case, unless properly supervised, is a source of infection for his associates especially in the younger age-groups, and that, as well as the earlier deaths, the group he infects now will add to the tuberculosis mortality of 15, 20, 25 years or more later, the gravity of the situation becomes more apparent. The analysis referred to is disquieting; while it is regrettable, it serves to focus our attention on probably our greatest public health problem.

N. E. McKinnon.

<sup>1</sup>The Incidence of Tuberculosis in the Industrial Population, Louis I, Dublin, Ph.D., address delivered, American Public Health Association, Montreal, September, 1931.



## AN IMPORTANT RESOLUTION

THE following resolution passed at the Canadian Tuberculosis Association Annual Meeting which was held at Tranquille, B.C., June 21st, so concisely presents the present urgent situation in regard to sanatorium accommodation in Canada and so strongly urges the application of our present knowledge in preventing unnecessary new cases among nursing and medical personnel that it should have the widest possible publicity:

"In almost every part of Canada beds for the treatment and isolation of tuberculous people are far too few. Waiting lists for the admission of tuberculous patients are larger than ever before in the history of Canada, and the tuberculosis death rate has increased during 1930.

"This Association unanimously reaffirms its firm belief in the absolute basal necessity in the campaign against tuberculosis of ample sanatorium and hospital beds for the treatment and isolation of patients.

"Any means, such as clinics, for the finding of cases, makes the need of beds not less, but greater.

"In some parts of the country the need is so very great that provincial governments are urged to find means for the increase of beds immediately.

"We are strongly of the opinion that in all general hospitals all kinds of patients on admission should have an examination of sputum for tubercle bacilli as much a routine as examination of the urine, and that if possible, a single X-ray chest plate should be made of all patients admitted.

"These measures we consider necessary because tuberculosis is not infrequently an uncomplained of, unrecognized and undiagnosed background to more active disease, and as such, is a dangerous source of infection, especially to young pupil nurses.

"We further recommend the routine examination of pupil nurses at the beginning of their training in General Hospitals. Further examinations should be made during the course of their training. Examinations should include routine tuberculin tests and stereo X-ray chest plates.

"This routine might very well be applied to medical internes also."

The Canadian Public Health Association heartily endorses this resolution.

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# EPIDEMIOLOGY AND VITAL STATISTICS

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A. L. MCKAY, B.A., M.D., D.P.H. and F. W. JACKSON, M.D., D.P.H.

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## *Revised Communicable Disease Regulations in Ontario*

A. L. MCKAY, B.A., M.B., D.P.H.

THE previous regulations of the Department of Health of Ontario for the control of communicable diseases, had been in effect since February, 1923. Since that date the concept in a few diseases of the epidemiology and bacteriology had changed, and it was felt, after a thorough trial of some of the control measures with respect to the minor communicable diseases of childhood, that the quarantine of contacts for the long incubation period was not justified by the results obtained. It was found that it interfered, quite considerably, in school attendance, especially for children in the higher grades.

Therefore, after due consideration of all points involved and after consultation with the district officers of health of the department and medical officers of health of some of the larger centres and members of the staff of the School of Hygiene, University of Toronto, the regulations were re-written, received approval by the Lieutenant-Governor-in-Council on June 9th, 1931, and have been gazetted and distributed to every medical officer of health and other physicians in Ontario.

A brief summary of the changes made and the reasons, therefore, may be of interest to others in Canada and

elsewhere charged with administrative practice.

The report of the Committee on Communicable Diseases of the American Public Health Association, as adopted and distributed by the Dominion Council of Health of Canada, was used as a basis but not in entirety, as local adaptability was always kept in mind.

The new regulations commence with a series of definitions of the various terms, such as, carrier, contact, disinfection, isolation, quarantine, etc., which are more or less standard. Next is given a list of 45 diseases which are notifiable, under the Public Health Act of Ontario. The previous regulations contained a list of 42 diseases. In the new list, goitre and pellagra have been deleted. This was done because these diseases are not considered to be communicable diseases and they had not been reported in the past. Five diseases were added to the list, *viz.*: ancylostomiasis (hookworm), because of the immigration of some individuals from the Southern States to certain sections of the province; erysipelas was also added because it is designated as a communicable disease in the Public Health Act; infectious or epidemic jaundice was added in order to give facilities for further study of the

epidemiology of this disease; undulant fever was added since its presence in man has been found to be widespread in the province; trench mouth (necrotic gingivitis) was also added on account of small outbreaks which had been reported, and lastly tularæmia on account of several cases having been discovered in the previous year in the province.

The next regulation, requiring placarding of certain diseases, deleted the placarding for chickenpox, German measles and mumps. The elimination of placarding for these minor diseases was prompted by the antagonism of the public to the measure and also experience which had shown placarding to be of practically no benefit in the control of the disease.

The other points covered in the general regulations have to do with the care of milk containers from houses in quarantine. Here again the minor diseases have been left out and diseases mentioned only which could possibly be spread in this manner. Similar regulation is outlined to prevent persons from houses in quarantine engaging in the production or sale of milk. Typhoid carriers are prohibited from handling milk or engaging in the preparation of food to be sold or given to others.

In respect to burial and transportation of the dead only the major diseases are considered.

Concurrent disinfection is dealt with specifically and in terminal disinfection the necessity of thorough cleaning has been stressed. Fumigation has not been made obligatory but left to the discretion of the local boards of health and the expense is to be borne by the local boards.

New regulations for disinfestation by gaseous agents, especially referring to the cyanide compounds, have been drafted requiring all operators to be licensed by the Department of Health of Ontario on the recommendation of the medical officer of health of the county-town of the county or district in which they would ordinarily operate.

Each of the 45 notifiable diseases are considered separately. The changes are as follows:

*Cerebro-spinal meningitis*—All contacts are quarantined for 10 days from last exposure.

*Chickenpox*—No placard required; non-immunes may be quarantined at the discretion of the medical officer of health.

*German measles*—No placard, patient isolated eight days from appearance of rash and no quarantine of contacts. These changes were made because of the mildness of the infection and the ineffectiveness of the former control measures.

*Measles*—Isolation period was shortened by seven days and immunes were allowed to attend school from a quarantined house.

*Mumps*—No placard and no quarantine of contacts. These changes were made for the same reasons as the changes for German measles.

*Poliomyelitis*—Contacts quarantined for ten days in place of seven. This resulted from information on incubation period of disease gathered during epidemic in Ontario in 1929 and 1930.

*Scarlet Fever*—Isolation period of patient reduced to 28 days if no nasal or aural discharge persists. This change was made since the percentage of return cases appears to be no greater

after four weeks' isolation than after five weeks'. Immunes, if school children or teachers, are to be released after change of residence.

*Smallpox*—Minimum isolation 21 days. All scabs and lesions must be healed. Contacts are to be quarantined for 16 days instead of 14 days. This was done on account of long incubation period experienced in some cases.

*Whooping cough*—Immunes are to be released from quarantine without change of residence. Non-immunes, 12 years of age or over, are to be allowed to attend school without change of residence, as it has been found few children over 12 years of

age contract the disease. No restrictions are placed on teachers who have been contacts of a case of whooping cough.

It was felt that these alterations had gone as far as was necessary and practical at this juncture.

Public opinion, general practice and the more recent developments in epidemiology have been taken into consideration in these changes. We trust that the public and the profession will co-operate to the fullest extent in the application of these new regulations. Copies of the new regulations are available on application to the Department of Health of Ontario, Parliament Buildings, Toronto.

REPORTED CASES OF CERTAIN COMMUNICABLE DISEASES IN CANADA\*  
BY PROVINCES—AUGUST, 1931

Diseases	P.E.I.	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Diphtheria....	12	5	7	82	153	29	15	10	19
Scarlet Fever.	14	7	10	104	150	15	22	16	7
Measles.....	—	—	3	63	675	41	130	4	6
Whooping Cough.....	12	3	—	101	514	17	101	10	19
German Measles.....	—	—	—	9	20	†	1	—	2
Mumps.....	—	1	—	3	103	9	115	1	28
Smallpox.....	—	—	—	—	10	—	45	1	3
Cerebrospinal Meningitis....	—	2	—	—	9	—	—	1	1
Anterior Poliomyelitis	—	1	1	123	35	1	1	3	15
Typhoid Fever	—	3	14	105	131	14	11	12	7

\*Data furnished by the Dominion Bureau of Statistics, Ottawa.

†Not reportable.

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# PUBLIC HEALTH ADMINISTRATION

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J. W. MCINTOSH, B.A., M.B., D.P.H. AND FRED ADAMS, M.B., D.P.H.

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## *Provincial Public Health Appropriations for the Year 1929*

THE Committee of the State and Provincial Health Authorities of North America which was appointed to make a survey of health departments in Canada and the United States were desirous of establishing some record of the appropriations for public health as voted by the various legislative bodies concerned. A uniform questionnaire was prepared in which the attempt was made to have the appropriations divided under twenty-three headings, with the distribution of salaries in the appropriate items. A survey of salaries of Bureau and Division Directors was also included. Hospital grants, when included in a report from a Provincial or City Department, were deleted by the Committee in an attempt to fairly present comparative data. The attempt by the use of a uniform questionnaire for this purpose presents difficulties and may be misleading as to the emphasis placed on various phases of the work. The questionnaire was sent to the State Commissioners of Health in the United States and to the Provincial Medical Officers or

Deputy Ministers of Health of the Provinces of Canada. The report for eight of the nine provinces of Canada is summarized in Table I. The data supplied show the distribution of the appropriation and indicate the work of each province in the various fields of public health.

Table II presents the per capita expenditures for each province for the year 1929.

Notation has been made following Table I which is applicable also to Table II, indicating that certain services are cared for and included under other headings. These notes should be considered in the reading of the tables to prevent the inference that certain services are not provided.

Dr. T. A. Pincock, formerly Deputy Minister of Health and Public Welfare, Manitoba, now Medical Superintendent, Brandon Hospital for Mental Diseases, Brandon, Manitoba, who as a member of the Committee was largely responsible for the collection of these data, has kindly supplied this short report to the Journal.

TABLE I  
APPROPRIATIONS FOR 1929 FOR PROVINCIAL HEALTH DEPARTMENTS, CANADA  
FOR ITEMS 2 TO 25 AS SHOWN HEREUNDER

	Alberta	British Columbia	Saskatchewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia
1. Provinces.....								
2. Administration.....	\$19,220	\$19,197	\$15,480	\$15,780	\$51,100	\$57,000	*\$39,250	\$16,070
3. Epidemiology.....	5,000	14,414	11,220	26,260	Under 6	77,000	11,500	Under 2
4. Preventable Diseases—Venereal Diseases.....	17,440	27,414	30,000	20,500	133,600	75,000	11,600	14,119
5. Preventable Diseases—T.B. (ex. hospitals).....	5,324	6,683	.....	.....	.....	.....	.....	17,096
6. Biologics.....	12,000	4,541	24,000	*6,000	182,000	14,500	23,340	4,997
7. Laboratories.....	36,000	9,993	20,000	17,680	65,650	28,750	Under 2	16,369
8. Vital Statistics.....	21,950	11,525	35,000	16,100	40,725	16,200	Under 2	.....
9. Sanitary Engineering.....	4,000	8,655	8,000	.....	28,250	.....	Under 13	4,140
10. Public Health Instruction.....	5,250	.....	8,430	.....	82,900	.....	Under 10	.....
11. Child Hygiene.....	*45,524	.....	Under 13	500	9,000	.....	.....	.....
12. Dental Hygiene.....	3,780	26,079	*75,955	91,900	Under 11	.....	9,800	.....
13. Public Health Nursing.....	*33,934	.....	170,000	*68,040	Under 5 & 6	265,271	142,000	.....
14. T.B. Hospitals and Subsidies.....	202,507	.....	16,000	8,000	.....	156,500	Under 18	Under 2
15. County Health Work.....	None	.....	19,395	.....	.....	.....	.....	.....
16. Sanitary P.H. Inspection.....	10,350	.....	.....	.....	.....	.....	.....	.....
17. Malaria Control.....	None	.....	.....	.....	.....	.....	.....	.....
18. District Health Officers.....	*15,164	.....	4,000	1,000	45,300	100,400	62,792	.....
19. Occupational Diseases.....	None	.....	.....	.....	48,800	.....	Under 2	.....
20. Mental Hygiene.....	2,600	.....	.....	.....	.....	.....	2,000	.....
21. School Hygiene Medical Inspection.....	Items 11, 13	15,151	.....	.....	Under 11	.....	26,500	.....
22. Hotel Inspection.....	Item 16	.....	8,000	.....	Under 18	.....	Under 18	.....
23. Local Registrars, Payments for Certificates.....	4,800	.....	.....	1,500	600	.....	Under 2	.....
24. Housing.....	Item 16	.....	.....	.....	.....	.....	Under 2	.....
25. Personnel Accounts.....	None	.....	.....	.....	.....	.....	5,000	.....
26. Grand Total.....	*444,843	*143,652	*446,480	*273,260	*783,775	*790,621	*331,782	*72,791

## NOTES

- \*Alberta—Item 11—Includes Provincial Travelling Clinic.  
 \*Alberta—Item 13—Includes District Nurses in outlying parts of the province.  
 \*Alberta—Item 13—Includes child hygiene.  
 \*Alberta—Item 18—Includes District Physicians in outlying districts who attend to public health work when necessary.  
 \*Grand Totals—Item 26—Total for items shown only, and is only part of full appropriation for Departments of Public Health. Appropriations for institutions, charity and relief and grants to hospitals not shown here.

## NOTES

- \*New Brunswick—Item 1—Includes \$4,500 for printing.  
 \*Manitoba—Item 6—Exclusive of venereal diseases.  
 \*Saskatchewan—Item 13—Includes child hygiene and public health nursing.  
 \*Manitoba—Item 14—T.B. hospitals and subsidies—hospital accounts paid for indigent patients, \$13,040.  
 \*Quebec—Item 16—Librarian.



TABLE II

PER CAPITA EXPENDITURE ACCORDING TO TYPE OF SERVICE BY PROVINCES

PROVINCES	Alberta	British Columbia	Saskatchewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia
Administration.....	.029	.032	.019	.023	.015	.021	*.093	.029
Epidemiology, Preventable Diseases.....	.042	.082	.047	.072	.096	.056	.055	.056
Biologics.....	.018	.007	.027	.009				
Laboratory Services.....	.055	.016	.023	.026	.029	.005	.055	.009
Vital Statistics.....	.034	.019	.040	.024	.020	.010	Under 2	.029
Sanitary Engineering.....	.006	.014	.009	Under 3, 4, 5	.012	.006	Under 2	
Public Health Instruction.....	.008		.009	Under 13	.008		Under 2	.007
Child Hygiene.....	.070		.087	.139	.028	Under 14		
Dental Hygiene.....	.005	.047	12 excluded				.023	
Public Health Nursing.....	.052				Under 16		Under 16	
County Health Work.....			.018	.012		.059		
P.H. Inspection, Hotels, Nuisances, etc.....	.015		.022					
District Health Officers.....	.023		.004	.001	.013	.036	.149	
School Hygiene, Medical Inspection.....	Under 11 & 13	.025		Under 4, 5, 11, 13	Under 11	Under 14	Under 16	.063
Occupational Diseases.....					.014			

\*In New Brunswick, administration includes: Vital Statistics, Printing, Public Health Instruction, etc.

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# PUBLIC HEALTH NURSING

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RUBY M. SIMPSON, Reg.N., and BARBARA A. ROSS, Reg.N.

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## *The Public Health Nurse in a Health Unit*

MISS K. ROWLAY, R.N., Health Unit No. 1 Saskatchewan

SINCE the organization of city health departments the urban death rates have been steadily decreasing. The object of a full-time health district is to achieve the same result among farm and village dwellers.

At present as you know Saskatchewan has but one full-time health unit which has been in operation about two years. This health district covers a territory of eight rural municipalities, having a total population of approximately 25,000 people.

The staff of Saskatchewan's health district consists of a full-time medical health officer, nurse, sanitary inspector and a secretary-technician.

The programme of the public health nurse in such a district must be so arranged that she may give the greatest service to the majority of people within that district. May we then consider the nurse's activities in the different age groups of the population.

The work must necessarily begin with the mother during the prenatal period if we would give each child his rightful heritage of health. The expectant mother is visited and urged from the beginning to seek her own doctor's advice and guidance. Any help or advice as to the preparation for home cases is given by the nurse

and literature of a helpful nature is sent out from the health district office.

To provide further supervision a monthly prenatal clinic has been established at the headquarters of the unit. A full clinical history is taken and the record of the blood pressure and urinalysis kept from month to month. This, of course, is but a beginning in the important work so sorely needed in rural Saskatchewan.

A prenatal letter, together with the patterns for mother and babe, is sent out stressing the value of the monthly urinalysis and the blood pressure reading. As yet a complete examination of the expectant mother has not been provided for and in cases where a special examination is warranted the patient is sent to her own doctor with the full history as found at the clinic.

In cases where the maternity grant is applied for, home visits are made wherever possible, or in cases where financial aid is needed the grant is applied for by the nurse and in many instances the aid of local voluntary organizations is solicited.

The next group to be considered will be our infant population. When the birth certificates are received an "Infant Letter" with the diet folders

and such literature as "How to take Care of the Baby" "Rickets (Prevention and Cure)" are sent to the mother and as in other groups home visits are made. Six months later a second letter is sent reminding the parents that it is now the advisable time to have the infant protected against smallpox and diphtheria.

There are four monthly weighing centres in operation in four of the more central towns in the Unit. These are conducted by the doctor and nurse and each baby attending is given regular physical examinations. The centres are proving of real service to mothers. Adequate diet and systematic feeding are urged and the visible benefits of this are shown by the monthly gain in the infant's weight. Protection against diphtheria and smallpox is always encouraged. In connection with one centre an immunization clinic was held.

The services rendered in the different age groups will necessarily overlap and we find the "child welfare conferences" including the pre-school child as well as the infant. Annual baby clinics are planned and arranged for throughout the whole Unit and stress laid on bringing the pre-school child. This also applies to the "weighing centres".

Let us now pass on to another important phase of the work, namely, that dealing with the school child. There are of course the routine school inspections of rural and village schools. Since there is a full-time doctor the routine may be somewhat different to the system employed by the nurse not in an organized unit.

In the morning the inspection is made by the nurse when the height, weight, dental defects etc., are record-

ed. In all rural schools, whenever possible to do so, the parents are notified that the doctor will be present in the afternoon to examine the pupils and they are invited to come and bring any pre-school children. In many cases a large percentage of parents are present and a conference can be held between parent, doctor and nurse. In this way the nurse may come in contact with the parents and often more co-operation is inspired. As many home visits as possible are made in the school district.

Teachers and school board officials are encouraged to report any outbreaks of a communicable disease and in many cases a visit to the school for communicable disease control alone may be necessary.

Health talks are given to the school children to encourage further observance of the laws of health.

In cases of indigent parents, children with marked defects of vision are referred to the C.N.I.B.; the municipality or even local lodges of fraternal societies. School boards are encouraged to provide for the necessary dental work in their school as many parents are unable to provide for this personally.

The school sanitation is reported upon by the nurse and recommendations for improvement given to the school board. Health bulletins are sent each month to the teachers from the Health District Office.

Since the beginning of the year immunization has been carried on by the Health Unit staff. It might be interesting to briefly outline the plan adopted in this work.

In districts where the doctor's services are unavailable, or in dis-

tracts where a request for this service is made, "Consent Letters" together with appropriate literature are distributed to the various families; these must be signed if the parents desire their children immunized. Surrounding schools within a reasonable radius are notified as to the day set aside for the clinic. This work includes the infant, pre-school, and school age children and frequently even adults.

The first day is spent giving the Schick test, as in large groups like this many are already immune from previous inoculations and the reactors are picked up. One also finds positive Schicks in people believing themselves immune from previous inoculations. The children 8 years of age and under are given the first dose of toxoid and are vaccinated (smallpox) at this time. Three days later the Schicks are read in the older age groups and the first dose administered to those requiring it.

These immunization clinics also provide a means of coming in touch with parents and school officials.

After the period necessary to build up the immunity, a day will be spent in each school where such a clinic has been held, and the Schick test applied to test the immunity acquired. The children will then be given a certificate stating their protection against diphtheria and smallpox.

Children of indigent parents living in the district may be vaccinated and inoculated at the office every Saturday morning.

The services to the adult will necessarily be more along educational lines. Health literature is sent to the homes. Visits are made re commun-

icable diseases, tuberculosis investigations and such cases as warrant investigation re sanitary conditions, child welfare problems or where relief is indicated. Local organizations are called on and aid solicited when necessary.

Health educational films have been procured and shown in the local theatres in the Unit which have tended to increase interest in the different lines of the work. The Metropolitan Life Insurance Co. and almost every provincial health departments have films for loan.

A bulletin board at the district's headquarters provides a means of bringing items of health value to the notice of the public.

The usual inspection of nursing homes is made before licences for nursing homes are granted within the Unit.

Home nursing classes for junior and senior groups are planned and carried on during the winter months when the town and village schools are being inspected.

Vital statistics in Saskatchewan's Unit at the end of two years are very encouraging. The rates for 1930 are as follows: The Provincial general death rate is 7.7; that of the Unit is 5.2. The Maternal mortality rate was 2.3 in the Unit area which is a favourable comparison with the rate of 6.2 for the Province. The Provincial infant death rate was 73.5 while that of the Unit was 60.

With the confidence of the public once gained the nurses' work becomes easier and greater opportunities present themselves for service and health education moves steadily onward.

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## CORRESPONDENCE

### STATE MEDICINE

IN a communication received from Dr. R. M. Johnston of Vidora, Saskatchewan, Dr. Johnston takes issue with the recently retired President of The Ontario Health Officers' Association, namely, Doctor Lacasse, as regards the present necessity for the establishment of some form of state medicine. While not belittling the field of usefulness of the full-time public health officer, or the medical man occupying a salaried position, he comments on the anomalous position of the general practitioner, whereby he is expected to demonstrate as much enthusiasm in the preventive side of the practice of medicine as in the therapeutic side.

Dr. Johnston says—

"The unemployed physician, meaning those receiving no salary of any kind from civic sources or industrial agencies at all commensurate to his needs for personal maintenance, is left in a free-for-all race with his adjacent colleagues to scrape out a living as best he can, honestly, if possible, but with the ever-present temptation to capitalize upon the frequently recurring opportunities to bolster up uncertain incomes by less legitimate means. Senator Lacasse in his address utterly ignores the real meaning of remarks inserted in his address as applied to the present status of the ordinary working practitioner.

"The ordinary practitioner grouped in medical societies will probably view state medicine askance. He will apprehend that it will be a scramble with 'many called and few chosen.' As a matter of fact, apart from the fickle winds of political preference, which may be exerted in various quarters, the ordinary physician oc-

cupying a field with legitimate standing will hold that field undisturbed. The points of confusion will be in the localities greatly overmanned as has long existed in the East. But distribution of the excess medical skill is by no means impossible, particularly by the added health units which must accompany any health centre. Let us apply this to Western Canada which is sadly undermanned and greatly handicapped at present by an overwhelming excess of obligatory charity service. Senator Lacasse evidently knows very little about the problems and handicaps of the western physician. In a later paragraph some of these will be given due emphasis.

"The present system of medical treatment is high-priced in principle but over-cheap in practice. By that we mean the immense sum collectively the civil population manages to evade paying to the medical profession in honestly earned fees. Even though every cent were paid the system is an extravagant and onerous draught upon private finances in many ways not openly recognized by the public. We can best make this clear by the comparative figures involved in a general adoption of state medicine in Canada. Roughly, there are about ten thousand registered practitioners eligible for employment under such a new system, and the total salaries, allowing for specialist clinics and health units would approximate \$75,000,000 with another fifteen millions, for nursing service, and possibly twenty-five millions more for government pharmacies, dentists, and optometrists. 'One hundred and thirty millions annually for health!' 'Ye gods! What a sum the doctors are

asking!" Wait a minute! The present annual outlay (if it were all paid, or even half paid) will greatly exceed that amount, and the Canadian people are none too healthy even then. Under a state organization of medical practitioners, all of us would be co-operating and on our very tiptoes to help people to the utmost, instead as we are often and variously accused conspiring to keep them sick as a sure means of income."

After commenting on the economic situation, which has existed in the Canadian West for the last two years, he writes as follows—

"Looking over the aggregate results of ten years' residence in this location, a village in the extreme south-west constituency of the province, we find an average annual book income of \$4800 and an average annual expense account of \$3000, for myself, family maintenance, and necessary outlay to provide medicines, etc., for needs of the practice. The largest individual year in collections was 1928-29, when the munificent sum of \$3100 was gathered in. During the ten years \$7500 was received in niggardly grants from municipalities and Province to counterbalance sums written off, and now exceeding \$18000. These grants, of course, are counted into annual income totals, making the average actual payments for medical attendance around 31 per cent. Without any comment upon the honesty of the families in the district served, or their capacity to pay, we must with

all due respect to Senator Lacasse dispute his attitude respecting the dignity and necessity of State Medicine. No doctors I believe in Ontario or Quebec are ever forced or obligated to contribute over half their annual earned income for the medical care of potential provincial indigents. That in substance is what the Province of Saskatchewan has imposed upon me, and I see no hope of recompense here or hereafter.

"This is the time and the place wherein all Canadian doctors should look the status they hold with the public squarely in the face. How much longer can the profession at large delay from demanding a civil showdown, and a fair chance to stand from under the anomalous conditions they are now obliged to face. It is an intimate problem as related to the administration of public health measures. Every practising doctor is obligatorily in principle a medical health officer, and the medium through which the national slogan, 'PREVENT DISEASE!', should find universal effective expression. Wherefore then should it be degrading to his dignity to be paid an adequate annual salary for performing his civil duties as a citizen in the sphere for which he has been trained as a welfare worker for humanity? Some doctors, unfortunately, have no such altruistic aims and do not fit in that category, but we assume that the rank and file of physicians will do their best for human weal if given due encouragement."

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## NEWS AND COMMENTS

P. A. T. SNEATH, M.D., D.P.H.

### Preliminary Statistical Report, 1930

THE annual preliminary report of the Dominion Bureau of Statistics for the year 1930 has just been published. The total number of maternal deaths increased from 911 in 1929 to 941 in 1930, the rate per 1,000 living births remaining, however, at 5.9. The infant mortality rate has fallen from 77 per 1,000 live births in 1929 to 73.2 in 1930. The leading causes of death were as follows: diseases of the heart, with a rate of 132 per 100,000 population; cancer, 93; pneumonia, 74; pulmonary tuberculosis, 66; diseases of the arteries, 66; diarrhoea and enteritis, 61, and nephritis, 66.

### Sedgwick Medal

THE Sedgwick Memorial Medal which is awarded annually for distinguished service in public health by the American Public Health Association has been awarded for the year 1931 to Dr. George W. McCoy, Director of the National Institute of Health, Washington, D.C. The previous recipients of the award were Dr. Charles V. Chapin, Providence, R.I., and Dr. Theobald Smith, Princeton, N.J.

### Motion Pictures of Canadian Sanatoria

THE Canadian Tuberculosis Association, through the co-operation of the Dominion Motion Picture Bureau, is assembling 16 mm. films of all new additions to Canada's tuberculosis sanatoria together with black and white plans of one ward-floor in each building. The Association hopes in this way to bring to the attention of Sanatorium Boards and others the advances being made in the construction of these new buildings. Films have been taken of the institutions at Essex, London, Brantford, Freeport, Muskoka, Ottawa, Hamilton and the Niagara Peninsula

in Ontario, Prince Albert, Sask., Tranquille, B.C., Saint John, N.B., and Charlottetown, P.E.I., and it is hoped that pictures of Mount Sinai, Cartierville, Laval and Lake Edward Sanatoria in Quebec will also be available.

### "Ross Award Fund of America"

AS a tribute to Sir Ronald Ross who made possible the modern prevention and control of malaria, the raising of "A Million Shilling Fund" is proceeding in England. Dr. Robert L. Pitfield has consented to act as secretary of a committee in America who are undertaking to add to the fund by special subscriptions in America. It is the desire of the Committees to make the fund available immediately to Sir Ronald Ross so that his remaining years may be comfortable and free from worry. Cheques forwarded to Dr. Pitfield should read "Ross Award Fund of America". Among the trustees of the fund are Dr. Thomas McCrae, Dr. Theobald Smith, Dr. Joseph McFarland and Frederick L. Hoffman. It is hoped that many small contributions may be forwarded, thus indicating in some measure the widespread appreciation of the great work of Sir Ronald Ross.

### International Association of Dairy and Milk Inspectors

THE 20th Annual Convention of the International Association of Dairy and Milk Inspectors, under the Presidency of Dr. A. R. B. Richmond of Toronto was held in Montreal, September 10th to 12th.

At its opening session the Association gave general consideration to methods which might be applied in measuring the efficiency of official milk control activities. Professor Ira V. Hiscock of Yale University addressed the Association on this general subject. As a means of providing official control over the

milk supplies in the rural districts the formation of County or District Milk Control Units was suggested.

The two essential features to be incorporated in any scheme of milk control were stated to be: first, that production of milk on the farm must be so conducted that the possibility of infection will be reduced to a minimum; and second, that subsequent pasteurization must be so scientifically applied that any infection which does occur, despite the farm production precautions, will be prevented from reaching the consumer.

Pasteurization methods were discussed in detail in addresses by Mr. C. A. Holmquist of the New York State Department of Health and Mr. Leslie C. Frank of the United States Public Service. Results of tests to determine the ability of high temperature short-time pasteurization to destroy disease-producing organisms in milk were presented. These results with certain reservations gave promise toward the general acceptance of this newer method of heat-treating milk.

Substantial improvements have been effected in the efficiency of modern pasteurizing machinery, in which milk is pasteurized by the holding process.

The relationship of diseases in dairy cattle to public milk supplies was discussed in papers by Dr. Ronald Gwatkin of the Ontario Research Foundation and Dr. A. L. McNabb, Ontario Department of Health. Addresses on the same general subject were presented by Drs. Charles A. Mitchell, Ottawa, and G. A. Watson. These speakers emphasized the necessity for exercising a more thorough supervision over the health of all dairy cattle as an aid in safeguarding milk.

#### **Annual Meeting, International Union Against Tuberculosis September 6th to 9th, 1932**

**T**HE next meeting of the International Union against Tuberculosis is to be held in The Hague and

Amsterdam in Holland, September 6th to the 9th, 1932. The agenda for the VIIIth conference to be held at that time include a biological, a clinical and a social subject. The Honorary Secretary of the Union has requested the Canadian Tuberculosis Association to suggest a first speaker for the biological subject and the names of two others to be chosen as one of ten to discuss each of the other two subjects. The name of Dr. A. H. W. Caulfeild, Toronto, has been forwarded for first speaker on the biological subject, and Drs. C. D. Parfitt, Gravenhurst, Ont., and D. A. Stewart, Ninette, Man., to speak respectively on the two other subjects.

#### **Tuberculosis Sanatorium Beds in Canada**

**I**N an address on Sanatorium Economics and Diagnostic Services delivered at the meeting of the American Hospital Association, Dr. R. E. Wodehouse, Secretary, Canadian Tuberculosis Association, presented salient facts regarding the sanatorium service in Canada. There are, he indicated, "about 7,000 sanatorium beds operating in Canada for the care of the tuberculous. They cost us annually for upkeep approximately \$7,000,000, care for nearly 15,000 tuberculous annually, and have an estimated replacement value of \$18,000,000."

Dr. Wodehouse pointed out that the more complete the diagnostic service the more beds were required and he considered that accommodation of three beds per death was economically sound.

#### **British Columbia**

**A**T the annual meeting of the Canadian Tuberculosis Association, Dr. W. J. Dobbie, Weston, was elected President; Mr. J. B. Bailargeon, Montreal, Vice-President, and the following were elected to the Executive Council: Prof. Allan Rankin, Edmonton, Alta.; Dr. J. W. McIntosh, Vancouver, B.C.; Hon. Dr.

J. M. Robb, Toronto, Ont.; Dr. R. J. Collins, Saint John, N.B.; and Dr. J. A. Couillard, Lake Edward, Que.

In accordance with the resolution adopted at the Annual Meeting of the Association in June regarding trachoma, the Provincial Board of Health has circularized the profession requesting information in regard to cases attended or known. The data gathered will be invaluable in planning the programme to meet the problem presented by trachoma.

Dr. R. A. Seymour, who has been for some time assistant superintendent of Vancouver General Hospital, was tendered a farewell dinner recently by the hospital staff upon the eve of his departure for Saskatoon. Dr. Seymour carries with him to his new work the best wishes of the profession in Vancouver.

Indicative of the trend of the times the subject of health insurance received a great deal of attention at the meeting of the British Columbia Hospital Association in September.

#### Alberta

**D**R. E. H. COOK, for twenty years superintendent of the Alberta Provincial Mental Hospital at Pinoka, has resigned. Dr. Cook will enter private practice on the Pacific coast limiting his practice to psychiatry. Dr. C. A. Barager, Commissioner of Mental Hospitals for Alberta, is acting temporarily as superintendent.

In a recent address Dr. A. E. Archer, President of the College of Physicians and Surgeons, Alberta, made pointed reference to certain conditions related to the practice of medicine in the province. He pointed out that certain districts would require medical service on the full time basis under salary from the municipality. He considered that such a plan should be confined to those districts

where medical services could not be otherwise supplied. Dr. Archer also raised the question of the care of indigents and pointed out that the physician was already carrying a much heavier burden of charity than he was entitled to. He considered that some constructive plan must be devised so as to give the proper service, not only to indigents but to the rank and file of the settlers in rural areas and provide as well a fair remuneration for the physician.

A new one hundred bed hospital at Lethbridge was formally opened in September. This hospital is an outstanding addition to the hospital facilities of the West.

#### Saskatchewan

**T**HE Executive of the Saskatchewan Association of Rural Municipalities has recommended to the Saskatchewan Relief Commission that assistance be given to physicians in a number of municipalities where residents are unable to pay for medical treatment. The resources of these municipalities being exhausted, they are unable to pay physicians, and it is suggested that a minimum of \$150.00 per month and assistance in travelling expenses be provided. A recommendation in regard to hospital aid contained the suggestion that the Federal Government grant to hospitals an allowance of \$1.25 per patient per day this allowance being made for indigent patients only.

#### Manitoba

**T**HE Manitoba Medical Association has elected the following officers: President, Dr. Ross Mitchell, Winnipeg; First Vice-President, Dr. E. C. Barnes, Selkirk; Second Vice-President, Dr. G. Perry Armstrong, Portage la Prairie; Secretary, Dr. F. W. Jackson, Winnipeg; Treasurer, Dr. F. G. McGuinness, Winnipeg. Members at large to the executive are: Dr. A. G. Meindl, Winnipeg, and Dr. W. J. Elliott, Brandon.

A new sanatorium in St. Vital municipality was formally opened on September 22nd. The main building has accommodation for 250 beds and the children's pavilion for 40 to 50 beds. Sister Letellier will be in charge. At the opening ceremony addresses were delivered by Archbishop Sinnott, Father Beaudrier, Hon. Dr. E. W. Montgomery, Minister of Public Health and Dr. J. E. Boardman, Chief of staff of St. Boniface Hospital.

### Ontario

**DR. CHAS. G. STOGDILL** has been appointed director of mental hygiene in the City Department of Health, Toronto. Dr. Stogdill is a graduate of the University of Toronto, holding degrees in arts and medicine. He has been a resident of Toronto since 1921, coming from Seaforth.

Dr. Stogdill succeeds Dr. E. P. Lewis who resigned to accept an appointment in the Toronto Psychiatric Hospital. Dr. Lewis will continue for some months in an advisory capacity with the Department of Health.

A course of lectures dealing with all aspects of maternal care was given on September 24th and 25th by the Maternal Care Institute at the Toronto General Hospital under the auspices of the Department of Public Health of the city of Toronto. The course was open to a limited number of nurses from the various nursing organizations in the city, about 40 being in attendance. In his address of welcome, Dr. G. P. Jackson, Medical Officer of Health, Toronto, spoke of the splendid opportunity which the institute, now in its third year, provided for an interchange of ideas based on different kinds of experience. The course of lectures were given by Miss Ethel Cryderman, Ottawa, central supervisor for the Victorian Order of Nurses.

Mr. C. K. Johns, M.Sc., Central Experimental Farm, Ottawa, was elected Third Vice-President of the International Association of Dairy and Milk Inspectors at the annual meeting held in Montreal recently.

James Craigie, M.B., Ch.B., Ph.D., D.P.H., Dundee, Scotland, has been appointed Research Associate in the Connaught Laboratories, University of Toronto. Dr. Craigie came from the University of St. Andrews where he has been engaged in research studies in the field of filterable virus diseases.

The recent amendments to the Industrial School Act are producing results that will be far-reaching. The method of securing a complete report of each child committed by the Juvenile Courts is enabling the Department of Public Welfare to build up a system which will give a definite answer to the question as to the relationship of broken home conditions to juvenile delinquency; also the relationship of mental deficiency to behaviour problems. It is a constructive move on the part of the department which will revolutionize the whole approach to the problem of juvenile delinquency. It is planned to remove in the near future a proportion of the mentally defective children from the industrial schools and place them in institutions such as Orillia where they will receive the needed treatment combined with the training which such institutions provide.

Appreciation of the work of Dr. J. H. Radford, Medical Officer of Health of Galt, was expressed in a dinner tendered at the golf club by the South Waterloo Medical Association. Dr. Radford was recently honoured by being appointed president of the Ontario Health Officers' Association. He has been medical officer of health of Galt, Ontario, for fifteen years and has been a practitioner of

medicine for nearly fifty years. The Honourable Dr. J. M. Robb, Minister of Health of Ontario, expressed the good wishes of Dr. Radford's many friends and briefly reviewed the contribution to public health which Dr. Radford has made in Galt.

At a special meeting of the Orillia Township Council held on Saturday, September 19th, the appointment of a municipal doctor for the township was considered and it was decided to place the question before the township voters in January. By this plan the doctor would render medical services without charge to any resident in the township.

More than 100 doctors from Toronto and various points in Ontario were registered in the third annual post-graduate week of lectures which was held recently at St. Michael's Hospital, Toronto. The programme for the week as arranged reviewed doctors' current problems in the light of the more recent authoritative data. The course was given free of charge and attracted several medical visitors from the United States. Extended plans for next year, which include surgical subjects, are under way, and a number of leading surgeons have already volunteered their services. The practice of preventive medicine found a very definite part of the programme.

A good-will visit was paid recently to Battle Creek, Michigan, by a delegation of more than 100 prominent business men and educationalists from London, Ontario. The visit was arranged to mark the silver anniversary of the founding of the Kellogg Company by Mr. W. K. Kellogg. Appreciation was expressed by the Honourable Dr. J. M. Robb, Minister of Health, and by Mayor Hayman and Dr. Sherwood Fox, University of Western Ontario, of the interest of Mr. Kellogg in promoting international good-will and of the establishment of the Kellogg Foundation for

Child Welfare. The Foundation will carry on work in the United States and Canada as well as in certain other countries.

#### Quebec

AT the meeting of the American Public Health Association in Montreal in September great interest was shown in the work of the county health units. An interesting tour of Dr. Vezina's unit at St. Jerome was appreciated by many of the visitors. Dr. Lessard, Dr. Nadeau, Dr. Vezina, Dr. Sylvestre presented papers showing the work and accomplishments of the units. The meeting closed with one of the most inspiring addresses presented, that of the Hon. Athanase David, Provincial Secretary, on "The Duty of the State in the Matter of Health."

#### New Brunswick

DR. WM. WARWICK, District Medical Officer of Health, St. John, N.B., attended the meeting of the American Public Health Association in Montreal in September. He presented the opening paper at the section of Epidemiology. Dr. Warwick showed the great progress that had been made by toxoid immunization in the control of diphtheria in the province, especially in the district of St. John, where more than one third of the child population are immunized. Dr. Abramson also attended the meeting.

#### Nova Scotia

DR. CLIVE MARSHALL, now of Yale University, formerly Provincial Psychiatrist, has been making special investigations during the summer for the Nova Scotia Government.

Dr. J. A. Doull, Professor of Hygiene at Western Reserve University, Cleveland, visited his home, Pictou County during the summer.

## Books and Reports

D. T. FRASER, B.A., M.B., D.P.H.; R. R. McCLENAHAN, B.A., M.B., D.P.H.

### **Determinative Bacteriology—**

*By Lehmann-Neumann-Breed. English translation of the 7th completely revised German edition, in 2 volumes. Vol. I., Atlas of Bacteriology and Laboratory Manual, 1930. Vol. II., General and Special Bacteriology, 1931. Published by G. E. Stechert & Co., (Alfred Hafner), 31 East 10th Street, New York. Price \$9.00.*

This is the most classic European laboratory guide and compendium of General and Determinative Bacteriology and we are pleased to see that it has been translated into English. It is unfortunate that this translation has been delayed in publication. As many American and Canadian laboratories possess and know the German edition of this valuable work, no extensive review of the English edition is necessary.

The manual of General and Determinative Bacteriology of Lehmann-Neumann-Breed fills an urgent need for a briefer compendium than the large, ten volume, complete compendium of pathogenic bacteriology prepared by Kolle, Kraus and Uhlenhuth. It is a book which presents our knowledge of the pathogenic and non-pathogenic species in a critical and authoritative manner, pointing out the types that should really be regarded as distinct species and those that should be regarded as varieties.

The fundamental plan of the book is to condense our knowledge of general bacteriology, to furnish a useful guide for the determination of species of bacteria, and to give a critical review of the systematic re-

lationships of all recognized species of bacteria. The laboratory guide gives a clear and concise summary of the most commonly used bacteriological methods, especially those in use in German laboratories. The eminence of the authors in the field of bacteriology and the fact that this book has seen 34 years of intensive use is a sufficient guarantee of its real value.

The value of the English edition is increased by the competence of the men (Dr. Robert S. Breed, Dr. H. H. Boysen, Mr. P. Arne Hansen and Dr. Wm. Reiner-Deutsch) who have undertaken the work of preparing the English translation. This laborious work has been finished in an excellent way. By this translation, Dr. Breed and his colleagues performed a real international service for those who are not familiar with the German language. Thus many important European bacteriological findings that are very frequently ignored in American scientific literature are made available to all English speaking bacteriologists.

This manual is illustrated with 65 excellent colored plates, and 45 text figures. No other book in any language reproduces the macroscopic characters of bacterial cultures so naturally as does this well known book.

As a former student and assistant of Dr. Lehmann, I am pleased to have the judicial scientific spirit of the Bacteriological and Hygienic Institute of the University of Würzburg thus presented to American and Canadian laboratory workers.

J. M.



**Health at the Gateway.** By E. W. Hope, O.B.E., M.D., D.Sc., Professor of Public Health, University of Liverpool; Cambridge University Press, 1931, 205 pages with 22 illustrations. Price \$5.00.

The evolution of public health services may perhaps be best followed by considering its effects on a community. When a city such as Liverpool embraces not only the problems of a rapidly growing manufacturing centre but also the diversified conditions of a world port, it presents an ideal subject for this study. Professor Hope, from his experience as Medical Officer of Health in Liverpool, is well fitted for the task of relating the development of measures that have transformed that city into a model of sanitary and public health administration. Liverpool has had problems to face that would be formidable even to-day. A small town grew into the gateway of manufacturing England with the Industrial Revolution, facing epidemics from home and abroad, the dangers of which were intensified by its own overcrowded and unsanitary housing. The potato famine in Ireland was the occasion of 300,000 destitute immigrants landing within six months, enough to overtax the resources of any city. Emerging from its dark past, however, Liverpool so advanced that it became the site of the first School of Hygiene and Tropical Medicine. The status of present condition is ably

related and is a credit to the sound foundations provided by past administration.

The early growth of the city and port are dealt with first, with an outline of the early efforts towards social improvement. The legislation concerned with cholera is specially reviewed. A history of long quarantines, of airing ships' cargoes for weeks on large floating lazarettos, measures that were incompatible with commercial efficiency and which were gradually altered with advances in medicine and epidemiology. Successive chapters deal with schools, water supply, dwellings, municipal cleanliness, control of food supplies, and public health legislation. One feels that, important as these are, they are secondary to the "gateway". Though improvements in the public health measures took place step by step in both port and city, the emphasis is placed on protecting the city from exotic infections that are always a menace. International obligations are discussed, and the present co-operation made possible by the League of Nations Health Committee is indeed praiseworthy. This book gives an interesting sketch of the history of public health, and though not too technical for the layman, it would also be of value to the public health officer as an example of the work being done in one of the larger cities.

G. L. M. S.

## BOOKS RECEIVED

*A Manual of Clinical Laboratory Methods.* By Clyde Lottridge Cummer, Ph.B., M.D., F.A.C.P. Third edition, thoroughly revised, illustrated with 173 engravings and 12 plates. Publishers, Lea and Febiger, Washington Square, Philadelphia, 1931. Price, \$6.75 net.

*The Principles of the Prophylaxis of Leprosy.* First General Report of the Leprosy Commission. Publishers, Health Organization, League of Nations, Geneva, April, 1931. Price, 6d.; 15c. Series of League of Nations Publications, III. Health, 1931, III, 2.



## CURRENT HEALTH LITERATURE

*These brief abstracts are intended to direct attention to some articles in various journals which have been published during the preceding month. The Secretary of the Editorial Board is pleased to mail any of the journals referred to so that the abstracted article may be read in its entirety. No charge is made for this service. Prompt return (within three days) is requested in order that the journals may be available to other readers.*

### **The Eradication of Syphilis as a Practical Public Health Objective—**

"By public health effort syphilis can be made a rare disease in this generation." Dr. Parran, Commissioner of Health, State of New York, presents clearly and concisely the reason for this assertion.

Parran, T., Jr., J. A. M. A., v. 97, No. 2 (July 11), pp. 73-77.

### **Diphtheria Toxoid (Diphtheria Anatoxine-Ramon) in Infancy—**

Diphtheria toxoid was given in two doses, each of 1 cc., to 117 infants ranging in age from 4 days to 2 years. Negative Schick tests were obtained in 98 per cent of these infants, two weeks after the second injection. Reactions were noted in only two cases. One case of clinical diphtheria occurred in a vaccinated child which had been Schick negative when tested after the vaccination.

Greengard, J., J. A. M. A., v. 97, No. 4 (July 25), pp. 228-230.

### **A Study of Illness Among Grade School Children—**

Records were obtained of all absences of three or more successive school days which occurred among pupils attending the New Haven public schools during the school year 1927-28. Sickness accounted for 94.4 per cent of the absenteeism. The most common causes of sickness were colds, disease of the throat and tonsils, mumps and measles. Respiratory

tract disease accounted for 53.8 per cent of all the cases of sickness and 38.9 per cent of the total days of sickness. Specific communicable diseases of childhood caused 27.9 per cent of the cases and 44.2 per cent of the total days of sickness. There was an average of 49.3 day of sickness for each case of whooping cough—the highest average figure for any of the individual causes of sickness. The average number of days of sickness per case was greater for the five year age group and decreased as age increased. No consistent sex differences were noted.

Wilson, C. C., Hiscock, I. V., Watkins, J. H., Case, J. D. and Rice, J. L., Pub. Health Rep., v. 46, No. 31 (July 31), pp. 1801-1823.

### **Fumigation as an Aid in the Control of Superficial Fungus Infections—**

Fumigation with a formaldehyde candle is recommended as a simple and effective method of sterilizing all of the materials with which the spores of ringworm fungus may have come in contact, including shoes, bath mats, etc.

Ayres, S., Anderson, N. P. and Youngblood, Esther M., Arch. Dermat. & Syph., v. 24, No. 2 (August), pp. 283-287.

**Bacteriophage Therapy for Pyoderma—**Report of twenty cases—using a staphylococcus bacteriophage with encouraging results.

Kahn, B. L., Arch. Dermat. & Syph., v. 24, No. 2 (August), pp. 218-227.

